XCI Smart Sprinkler Controller

User Manual

Software and Hardware Installation Guide

Troubleshooting Guide

If you are experiencing difficulties with your Cyber-Rain System, please contact our Technical Support Department:

Telephone: (877) 888-1452 ◦ **Email:** support@cyber-rain.com

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Introduction

Thank you for choosing the Cyber-Rain XCI, the smart sprinkler controller that saves you time, money, and helps the environment.

Package Contents

A. Cyber-Rain XCI Sprinkler Controller
B. Mounting Hardware
C. Rain/Flow Sensor Harnesses (Pro Model only)
D. Valve Wiring Harness (2 harnesses for 16 zone model)
E. USB Wireless Access Point Module
F. USB Cable
G. Power Supply

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Installation

Pre-Installation Checklist

The following hardware and software is required for the Cyber-Rain XCI controller and software installation:

- ✓ A PC running Windows XP (with Service Pack 2 or later), Windows Vista, or Windows 7.
- ✓ An unused USB Port. If you do not have a free USB port, your local electronics store sells ***powered*** USB hubs that provide additional USB ports.
- ✓ 100MB free disk space on your PC.
- ✓ Broadband Internet access (DSL, cable modem, etc.). Please make sure your Internet connection is available at the time of initial installation. If you have a dialup connection, it should be active at the time of installation.

Install Controller

Now is a good time to make a note of your Cyber-Rain XCI controller serial number (14-digit number located on the back of the controller):

My Cyber-Rain XCI Serial Number: _____

1. Mount the Controller

Mount the controller on the wall with two #10 screws (included) mounted 6" apart (using the included template). If the controller will be mounted to hollow drywall, it is recommended that drywall anchors (included) are used to secure the mounting screws in place. Proper insertion of the drywall anchors requires carefully drilling a hole at each location with a ¼" drill bit (available at your local hardware store), and pushing one anchor into each hole. For outdoor applications, mount the controller in a plastic weatherproof box (available from most Cyber-Rain authorized resellers or directly from the Cyber-Rain website)*. In climates that experience exceptionally hot summers, the controller should be mounted in a shaded area as to avoid extreme operating temperatures.

- ❖ **Please note:** Cyber-Rain XCI is designed to be installed indoors (e.g., your garage, laundry room, other indoor access area). If you wish to install the unit outdoors, please order an outdoor box from Cyber-Rain or otherwise install the unit in a weatherproof box that is not made of metal.

2. Connect the Controller

The controller must be connected to your sprinkler valves. If you have an existing sprinkler controller, the sprinkler valves are connected to the controller with the wires typically inserted into numbered slots, which are called zones. Often these wires are in multiple colors. Before disconnecting an existing controller, make note of which wire runs to each sprinkler valve and mark them accordingly.

There should be a single wire for each zone plus a "common" wire. The common wire is generally the white wire. (If you are replacing an existing sprinkler controller note the wire marked "common" or "ground.") Make sure that each valve wire has at least ½" of wire exposed on the end which will be connected to the Cyber-Rain controller.

Connect the "common" wire to the left most opening in the valve wiring harness (make sure the screw terminals are facing up). Wires are connected by inserting the wire into the corresponding socket from the bottom of the harness and using a 1/8" slotted screwdriver to tighten the wire at the appropriate terminal location (Figure 1).

Figure 1: Wire Harness

Next, connect the sprinkler valve wires and tighten for each zone starting from left to right starting with zone 1 and going through zone 8. Make sure to note a description of each zone and the slot that you are connecting it to on the chart below. If your sprinkler system has fewer than 8 zones, start with zone 1 and continue until finished. All 8 zones do not need to be activated. If you have more zones than outputs available on your controller (either 8, 16 or 24 depending on your controller model), you will need an additional controller (see section on "Adding Additional Controllers"). Insert the valve wiring harness into the connector located on the bottom of your controller labeled "C 1 2 3 4 5 6 7 8 M" making sure that it is properly aligned with the two alignment slots (Figure 2).

Figure 2: Plugging in Wire Harness

If you have a 16 or 24 zone XCI controller, it will include additional wire harness(es). These wire harnesses have 9 ports instead of 10. If you have additional common lines, connect the commons to the leftmost slots of the additional harnesses. Continue inserting valve wires from left to right starting with zone 9. Then insert the valve wire harness into the unused connector closest to the 10 pin connector.

Harness 1 ***(8, 16, and 24 Zone Controllers)***

#	Color	Description
1		
2		
3		
4		
5		
6		
7		
8		

Harness 2 ***(16, 24 Zone Controllers)***

#	Color	Description
9		
10		
11		
12		

Harness 2 ***(16, 24 Zone Controllers)***

#	Color	Description
13		
14		
15		
16		

Harness 3 ***(24 Zone Controllers Only)***

#	Color	Description
17		
18		
19		
20		
21		
22		
23		
24		

If your irrigation system uses a master valve or pump (usually to draw water from a source such as a well or to provide additional water pressure) you will also need to use the master valve lead marked “M”. The Cyber-Rain controller will provide power to the pump / master valve when a zone is running, and for three seconds after the zone ends. If you do not have a master valve or pump installed, you will not need this feature.

Once you have finished wiring the controller, connect the white end of the AC adapter plug to the bottom of the controller making sure that it is tight and secure. Note: **the AC adapter plug can only be inserted one way** (Figure 3) and will snap securely into place when installed correctly. Then, connect the wall transformer to a 120VAC wall outlet.

Figure 3: Plug in Power Adapter

Manual Operation from the Controller Unit

Your Cyber-Rain XCI controller can manually run individual zones directly from the controller unit. **After all zone wires have been installed, you may want to use this feature to check that all zones are working properly.** To manually run a zone, press the left or right controller arrow keys (Figure 4) until the desired zone is displayed. Pressing the select button will activate that zone. Press the up or down keys to increase or decrease the amount of time your Cyber-Rain zone will stay active. Each press of the up/down key will increase/decrease run times by 30 seconds or, if desired, you can adjust the run time increment from the "System Details" tab of the Cyber-Rain software. Press the select button again to turn off watering.

Figure 4: Arrow Keys

Insert the Cyber-Rain Installation CD into the CD drive of the computer, or download the newest version of the software from the Cyber-Rain website's Support page at:

http://www.cyber-rain.com/Support/Downloads.aspx

Double click on the Cyber-Rain Installation program (Cyber-RainXCI16.exe) if you are using Windows XP or Windows 7. Vista users should instead right click on Cyber-RainXCI16.exe and select *Run as Administrator* to avoid security permissions issues. The following pictures illustrate the installation procedure:

Open File - Security Warning
The publisher could not be verified. Are you sure you want to run this software?
Name: ...eg\Desktop\Downloads\Cyber-Rain XCI16(2).exe
Publisher: Unknown Publisher
Type: Application
From: C:\Users\Greg\Desktop\Downloads\Cyber-Rain ...
Run
Cancel
Always ask before opening this file
This file does not have a valid digital signature that verifies its publisher. You should only run software from publishers you trust.
How can I decide what software to run?

A Windows Security Warning screen may open. If so, click "Run."

InstallAware Wizard
The InstallAware Wizard is verifying the contents of this setup package. This may take a moment.
Cancel

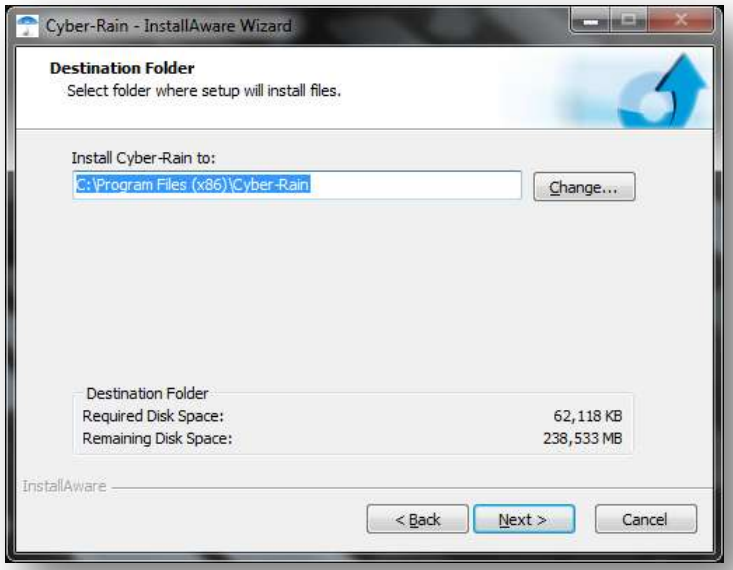
The Installation Wizard screen opens. Wait for the initialization process to complete before continuing.

Cyber-Rain - InstallAware Wizard
Welcome to the InstallAware Wizard for Cyber-Rain
The InstallAware Wizard will install Cyber-Rain on your computer.
WARNING: This program is protected by copyright law and international treaties.
To continue, click Next.
< Back
Next >
Cancel

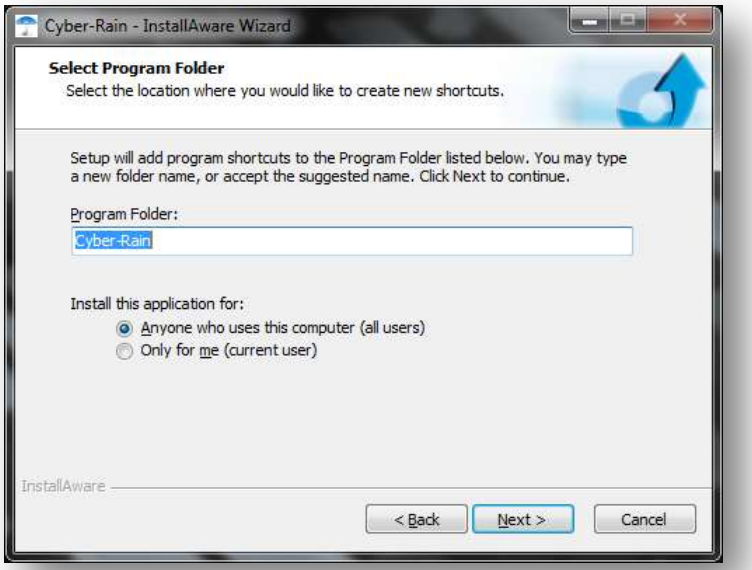
The "Welcome to the InstallAware Wizard for Cyber-Rain" screen opens. Click "Next."

Cyber-Rain - InstallAware Wizard
License Agreement
Please carefully read the following license agreement.
Cyber-Rain™ End User Software License Agreement
This End User Software License Agreement (this "License") contains rights and restrictions associated with the usage of the software that you are installing (including all upgrades, modifications, and new versions thereto, collectively, the "Software"). Read this License carefully before using the Software. By using the Software, you acknowledge that you have read and understood, and agree to comply with, each and every term and condition of this License. The Software contains copyrighted material, trade secrets, and other proprietary information, and is protected by both United
I accept the terms of the license agreement
InstallAware
< Back
Next >
Cancel

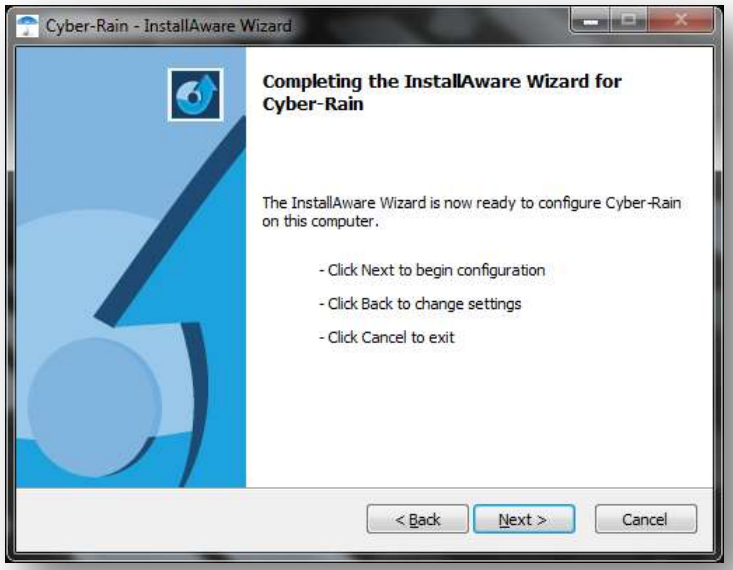
Please review and accept the Cyber-Rain End User Software License Agreement. Click the "I accept the terms in the license agreement" check box and then click "Next."



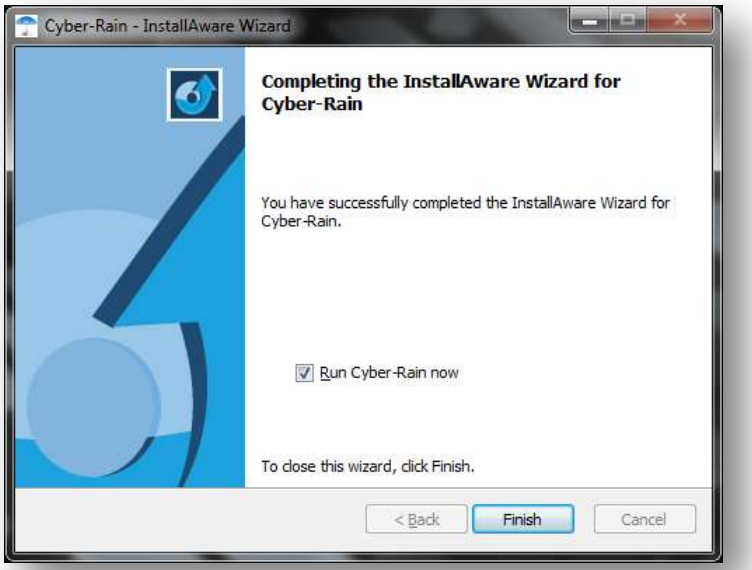
The "Destination Folder" selection screen opens and will default to the "Program Files" directory on your hard drive. Click "Next >."


Cyber-Rain - InstallAware Wizard
Select Program Folder
Select the location where you would like to create new shortcuts.
Setup will add program shortcuts to the Program Folder listed below. You may type a new folder name, or accept the suggested name. Click Next to continue.
Program Folder:
Cyber-Rain
Install this application for:
Anyone who uses this computer (all users)
Only for me (current user)
InstallAware
< Back
Next >
Cancel

The "Select Program Folder" selection screen opens and will default to name the file "Cyber-Rain." Retaining this name will make the program easier to locate later. If you have several users on your PC and would like each of them to have access to the Cyber-Rain program when logged in, select "Anyone who uses this computer." If only a single user should have access, select "Only for me." Click "Next".


Cyber-Rain - InstallAware Wizard
Completing the InstallAware Wizard for Cyber-Rain
The InstallAware Wizard is now ready to configure Cyber-Rain on this computer.
- Click Next to begin configuration
- Click Back to change settings
- Click Cancel to exit
< Back
Next >
Cancel

The "Completing the InstallAware Wizard for Cyber-Rain" screen opens. Click "Next >." The "Installing Cyber-Rain" screen opens next. Depending on your computer's configuration, this process could take several minutes to complete.

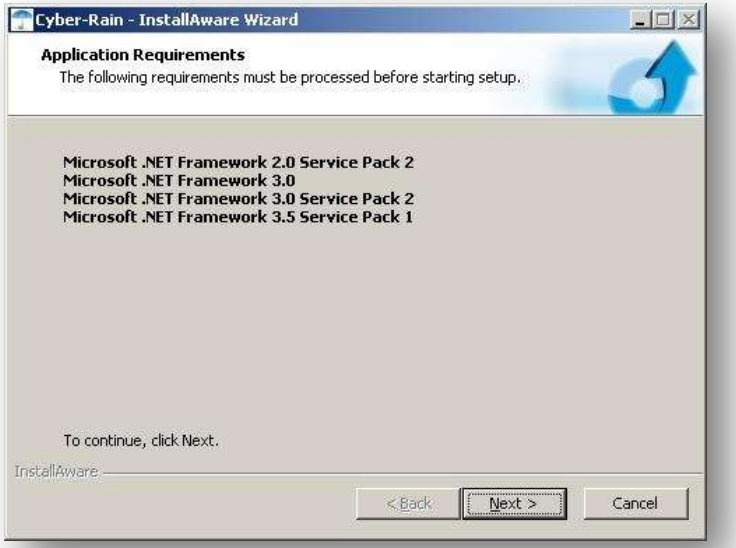

Cyber-Rain - InstallAware Wizard
Completing the InstallAware Wizard for Cyber-Rain
You have successfully completed the InstallAware Wizard for Cyber-Rain.
Run Cyber-Rain now
To close this wizard, click Finish.
< Back
Finish
Cancel

After the installer has finished the installation the "Completing the InstallAware Wizard for Cyber-Rain" screen opens. Check the option "Run Cyber-Rain now" to open the Cyber-Rain program. You will be prompted to connect your wireless access point. Select "Finish".

Depending on your computer's configuration, you may or may not be asked to install Microsoft .NET Framework after completing the Cyber-Rain software installation.

.NET Framework Installation

If you are running Windows XP and do not yet have Microsoft .NET Framework 3.5 installed, you may see the following additional screens:


Cyber-Rain - InstallAware Wizard
Application Requirements
The following requirements must be processed before starting setup.
Microsoft .NET Framework 2.0 Service Pack 2
Microsoft .NET Framework 3.0
Microsoft .NET Framework 3.0 Service Pack 2
Microsoft .NET Framework 3.5 Service Pack 1
To continue, click Next.
InstallAware
< Back
Next >
Cancel

The "Application Requirements" window opens. A list of missing requirements will be listed. Click "Next" to install the missing requirements.

Cyber-Rain - InstallAware Wizard
Installing Cyber-Rain Requirements
The program requirements are being configured.
Please wait while the InstallAware Wizard installs Cyber-Rain requirements. This may take several minutes.
Status:
AspNetMMCExt.dll, 3% complete
InstallAware
< Back
Next >
Cancel

The "Installing Cyber-Rain Requirements" window opens. This step may take several minutes to complete. Once completed, the setup will resume installing the Cyber-Rain software.

Automatic Software Updates

After Cyber-Rain has been installed, on your next reboot you will be prompted to select options for automatically updating your Cyber-Rain software. You can choose both how often your computer will check for updates and what notifications you will receive before updates are installed. The Cyber-Rain software will not check for updates until the date and time specified during this setup procedure.

Cyber-Rain - InstallAware Wizard
Welcome to the InstallAware Wizard for Cyber-Rain Updates
This wizard helps you set up InstallAware to automatically deliver important updates for Cyber-Rain to your computer, using your Internet connection.
NOTE: InstallAware does not collect any form of personally identifiable information from your computer.
To continue, click Next.
< Back
Next >
Cancel

Press Next to begin configuring automatic updates.

Cyber-Rain - InstallAware Wizard
Notification Settings
The InstallAware Wizard can find the updates you need for Cyber-Rain and deliver them directly to your computer.
Keep my computer up to date. Check for updates:
Every Sunday
at
3:00 AM
Settings
Notify me before downloading any updates and notify me again before installing them on my computer
Download the updates automatically and notify me when they are ready to be installed
Automatically download the updates, and install them
InstallAware
< Back
Next >
Cancel

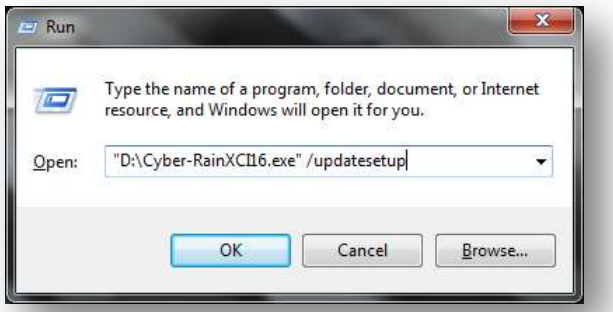
Select what date and time you would like the automatic updates to occur.

When you reach the Logon Credentials page, enter the administrator login information so that Cyber-Rain can update your software automatically, otherwise the computer will request the administrator password every time Cyber-Rain has a software update.

Cyber-Rain - InstallAware Wizard
Completing the InstallAware Wizard for Cyber-Rain Updates
You have successfully completed the InstallAware Wizard for Cyber-Rain Updates. InstallAware has saved your notification option.
To change your notification option, click Back.
To close this wizard, click Finish.
< Back
Finish
Cancel

Press Finish to complete the automatic updates setup process.

To rerun the Automatic Updates Setup at a later time, select “Run” from the Start Menu (Or type “Run” in the search field and press Enter) and click “Browse…” to locate the Cyber-RainXCI16.exe installation file. Add the command “/updatesetup” to the end of the filename (see figure below) and press “OK”.



Connect one end of the provided USB cable to the Cyber-Rain Wireless USB link. *Note: It is important to use the USB cable that came with the Cyber-Rain controller, as it provides more power than standard USB cables.*

Connect the other end to an available USB port on your computer. The LED lights on the USB Link should momentarily illuminate.

The USB Link LED lights represent the following:

Orange Illuminates when the access point is connected to the USB port, this light should stay on as long as the access point is connected to the PC.

Blue Number of lights illuminated indicates the signal strength of communications between the access point and the controller.

- 0-1 light indicates low signal strength.
- 2-3 lights indicate good signal strength.
- 4 lights indicate excellent/maximum signal strength.

Note: When your PC is on but the access point and controller are not communicating, these lights may turn off and back on periodically to test signal strength.

Green Illuminates when information is being sent from the PC to the controller. It is normal for this to periodically turn on as the PC needs to periodically send information to the controller.

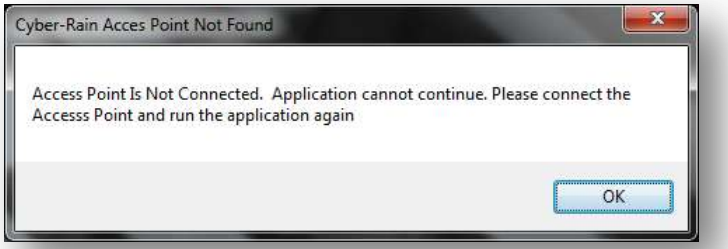
Red Illuminates when information is being sent from the controller to the PC. This will also turn on periodically.

Run Cyber-Rain Setup and Smart Scheduling Wizards

Start the software by double clicking on the shortcut icon on your desktop or running it from the Program Menu:

Note: after the initial installation & setup, Cyber-Rain automatically runs in the background and can be accessed through the taskbar on the bottom right corner of your desktop. Double click the Cyber-Rain icon and the application will launch.

The software first checks for the USB Access Point. If it is not connected, you will receive the following message:


Cyber-Rain Acces Point Not Found
Access Point Is Not Connected. Application cannot continue. Please connect the Accesss Point and run the application again
OK

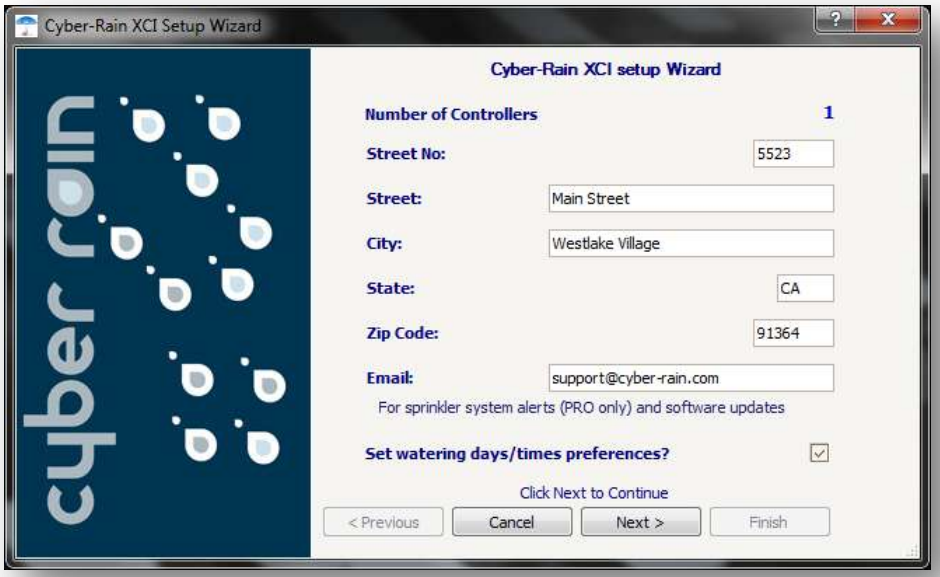
If the USB Access Point is connected, the "Searching for Cyber-Rain Controllers" screen opens. The Access Point will begin searching for new controllers. Once the controllers have been found, the Cyber-Rain XCI set-up wizard will automatically launch.

The setup wizard makes it simple to get your Cyber-Rain controller up and running properly. You will be asked to enter some simple information to help the Cyber-Rain software determine your location, sprinkler configuration and watering preferences.

The “Welcome to the Cyber-Rain XCI Setup Wizard” screen opens. Cyber-Rain automatically finds and binds to your controllers. Check to make sure that all controllers have been located. See **Additional Controllers** or **Troubleshooting Guide** if a controller is not located.

Cyber-Rain XCI Setup Wizard
Welcome to the Cyber-Rain XCI set up wizard
This Wizard will walk you through setting up your
Cyber-Rain XCI Sprinkler Controller System
Number of Controllers Detected: 1
Click Next to Proceed
< Previous
Cancel
Next >
Finish

Click “Next”. The Cyber-Rain software will then ask for your location so it can retrieve weather information to use when adjusting your watering time. Enter your address information, zip code and email. Your email address is needed to notify you of controller alerts (Pro Model only) and software updates. Cyber-Rain will never share your personal information with third parties without your express consent.

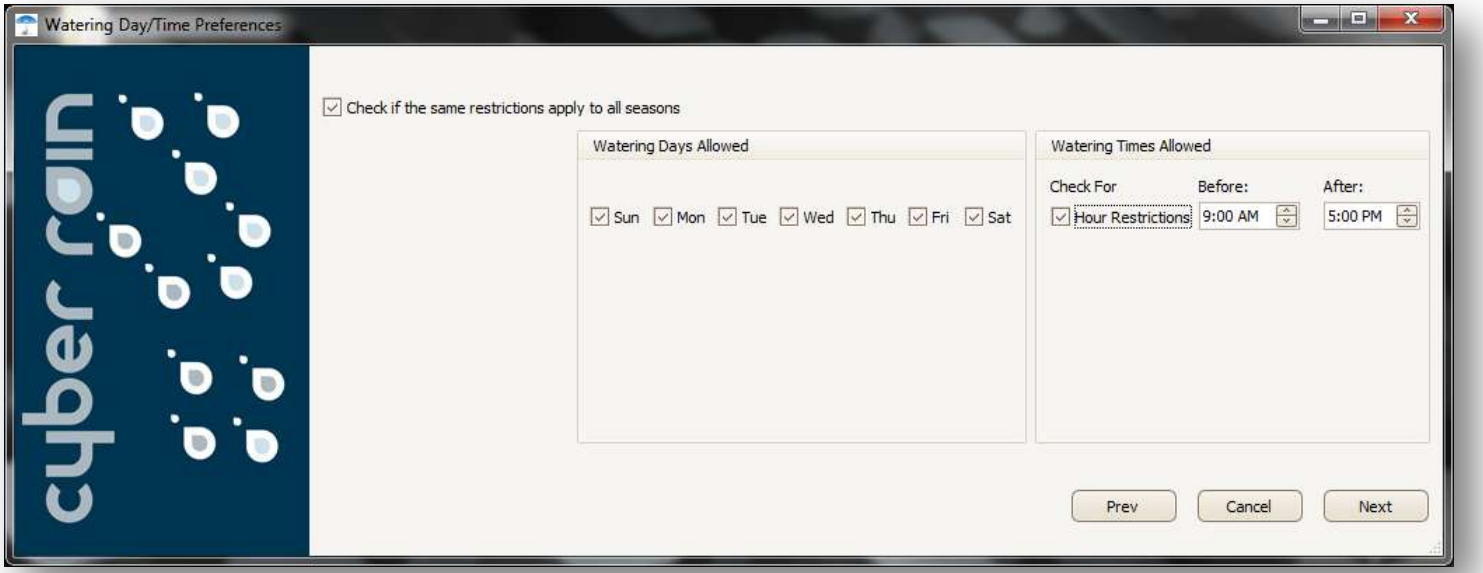


If your water municipality limits the days or hours that your sprinklers can run, or you would like to set your own watering preferences, check the “Set watering days/times preferences” box. This feature can be used to set a ‘mow day’ if you would like to make sure your sprinklers do not come on prior to regular lawn maintenance. Cyber-Rain will take these preferences into account when recommending your baseline watering schedule. Cyber-Rain defaults to allow watering on all days.

Click “Next” after entering your information.

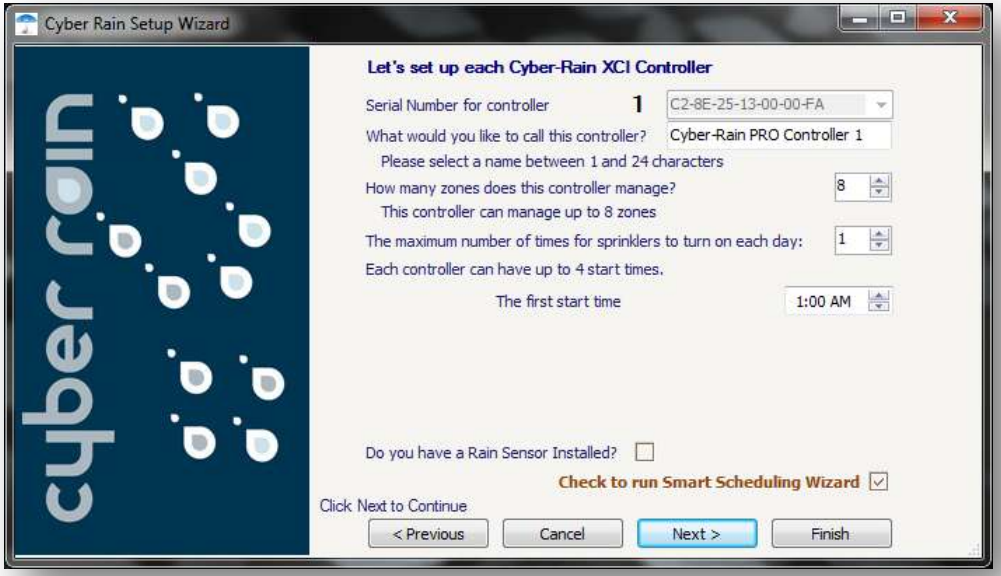
Watering Days/Times Preferences

If “Set watering days/times preferences” was checked, the Watering Day/Time Preferences box will open. Click on the box next to the appropriate day to check or uncheck the box. Check only the days in which you WANT to water. If watering is not desired during particular hours, check the Hours Restrictions box, and set the times that watering is desired, before and after. If watering day preferences vary by season, uncheck the “same restrictions apply to all seasons” box and set the restrictions by season as appropriate (see Watering Preferences in Advanced Settings Tab for more details).



Click on the “Next” button when you have made all necessary adjustments to move to the next screen.

After completing the initial customer information the “Controller Setup” screen opens.


Cyber Rain Setup Wizard
Let's set up each Cyber-Rain XCI Controller
Serial Number for controller
1
C2-8E-25-13-00-00-FA
What would you like to call this controller?
Cyber-Rain PRO Controller 1
Please select a name between 1 and 24 characters
How many zones does this controller manage?
8
This controller can manage up to 8 zones
The maximum number of times for sprinklers to turn on each day:
1
Each controller can have up to 4 start times.
The first start time
1:00 AM
Do you have a Rain Sensor Installed?
Check to run Smart Scheduling Wizard
Click Next to Continue
< Previous
Cancel
Next >
Finish

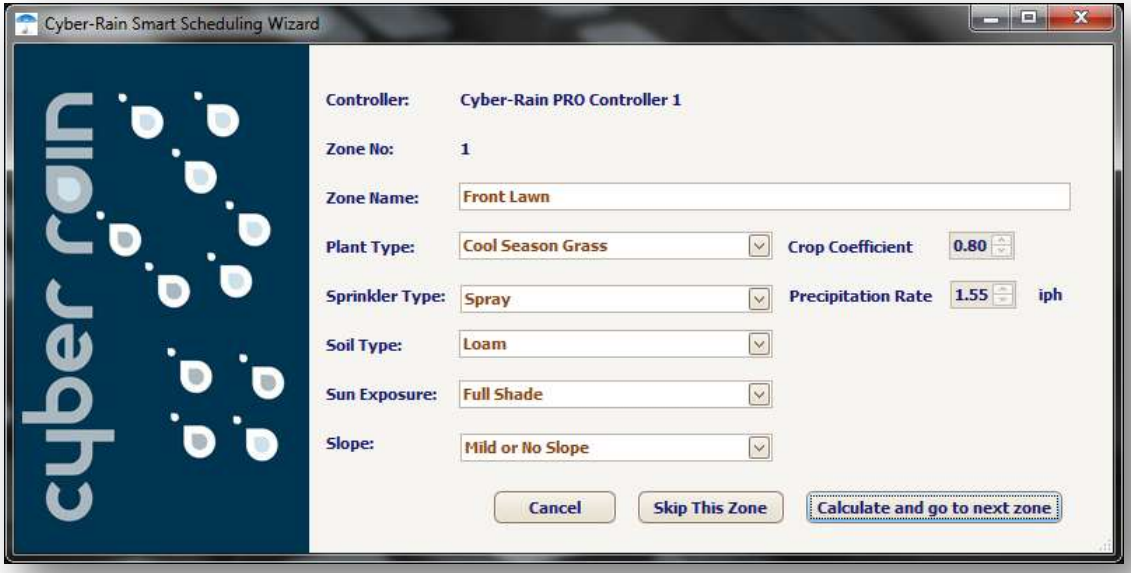
Follow these steps for each controller:

1. Confirm that the serial number of your controller matches the serial number in your documentation (also on the back of the Cyber-Rain controller). If there is a discrepancy, contact Cyber-Rain Technical Support.
2. Give your controller a name (such as “Cyber-Rain Controller 1” or “Joe’s Cyber-Rain”).
3. Each controller can manage from 1 to 8, 16, or 24 zones (depending on the model). Select the total number of zones that you want the controller to manage.
4. You can set up to four start times for your schedule to begin each day. Select the number that suits your needs, and then provide times for each watering cycle to begin. Typically one start time is sufficient as Cyber-Rain automatically uses Cycle and Soak for zones on a slope or with dense soil. See the **Cycle and Soak** section for more information.
5. If you have installed a Rain Sensor, check the box and set the delay you would like to have between the rain sensor opening and water resuming. Cyber-Rain defaults to one hour. These settings can also be adjusted in the System Details tab.
6. Select Next to launch the Cyber-Rain Smart Scheduling Wizard.

The Smart Scheduling Wizard makes it easy to determine a water-wise baseline watering schedule. The baseline schedule is the number of watering minutes during the hottest and driest period of the year (typically the months of July and August, depending on the region). This zone by zone process will require entering descriptive information about your landscape including: plant type, sprinkler type, soil type, sun exposure, and slope intensity. It will be helpful to have this information available for each zone. *(Note: You will need to be connected to the Internet to run the Smart Scheduling Wizard.)*

If you wish to skip the Smart Scheduling Wizard and instead manually enter your baseline watering schedule, uncheck the Check to Run Smart Scheduling Wizard box and select "Finish."

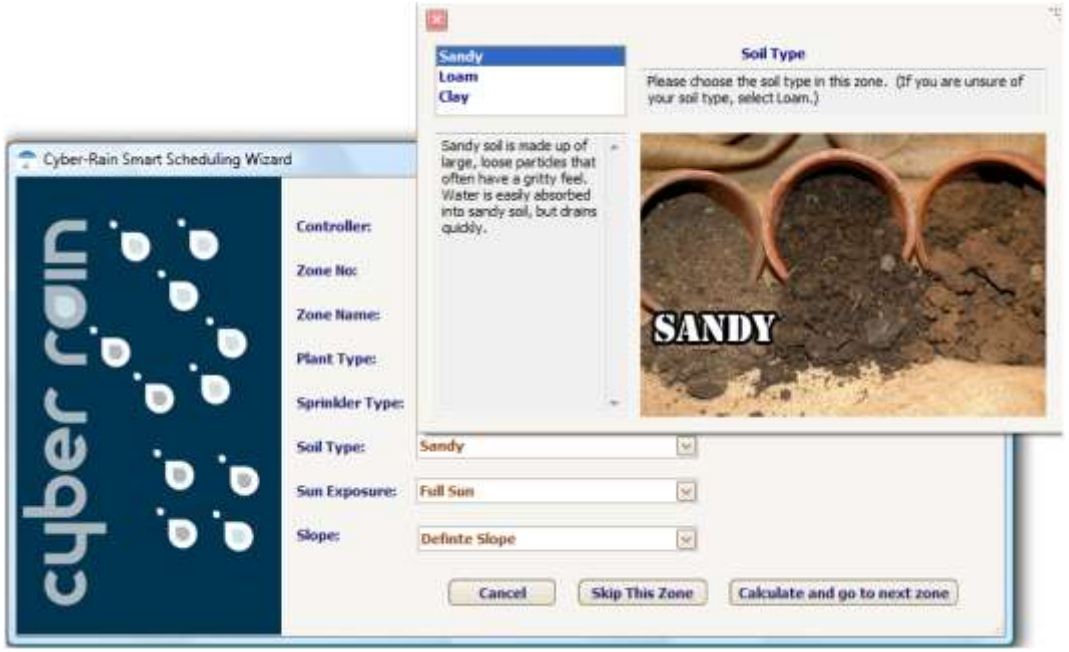
There may be a short delay before the Smart Scheduling Wizard launches. It will then ask about the landscape characteristics for each sprinkler zone, one by one:



Complete the following for each zone. Drop down menus with pictures and descriptions are available to help you with your selections. If you are not certain, pick the option that describes the majority of the zone:

1. **Zone Name:** (Optional) Give a descriptive name of the zone (e.g. Front Flowers)**.**

2. **Plant Type:** Category of plant from the drop down menu that best describes the zone. An average crop coefficient, which signifies the plant's water use, is generated. If you would like to enter a precise Crop Coefficient, select Custom and enter it directly.
3. **Sprinkler Type:** Type of sprinkler/emitter that is being used in this zone (utilizing the pictures provided). A default precipitation rate (in inches per hour) is generated based on typical values for the type of sprinkler you selected. If you wish to manually set this rate, select Custom under Sprinkler Type. This will enable the Precipitation Rate field. Your rate can be entered directly or you can use the arrows. To determine the precise precipitation rate of your emitters, consult the manufacturer of the sprinklers/emitters, or run a "catch-can" test.
4. **Soil Type:** Type of soil that best describes the zone. If your soil easily separates it is sandy, if it clumps together it is clay, and if it is in between it is loam. If you are uncertain of the type, select loam. If you have clay soil, Cyber-Rain will automatically cycle your watering by sprinkling a little and then waiting (Cycle and Soak). This gives the water a chance to soak in and reduces runoff.
5. **Sun Exposure:** How sunny most of the zone is for the majority of the day.
6. **Slope:** The slope of the majority of the zone. If your landscape is sloped, Cyber-Rain will automatically cycle your watering by sprinkling a little and then waiting (cycle and soak). This reduces runoff by giving the water a chance to soak in.



Once you have entered the information for Zone 1, select "Calculate and go to next zone". Cyber-Rain will ask for the same information for Zone 2. Complete the information for all the remaining zones. Press "Skip This Zone" if no valve wire is attached, or if you do not wish to use the Smart Scheduling Wizard for a particular zone.

Once the Setup Wizard has been completed, it will re-launch for all of the additional controllers that were detected.

Viewing Your Baseline Schedule

After completing the Setup Wizard the "Schedule for Controller" screen opens. If the Smart Scheduling Wizard was run, a progress bar will appear as the schedule is sent to the controller, and the window will open pre-populated with the **recommended daily watering minutes during the hottest times of the year** for each zone based on your landscape conditions and zip code. This is called your baseline schedule. Cyber-Rain will check the weather daily and adjust your baseline schedule with changes in temperature, humidity and rainfall. You can adjust your baseline watering schedule manually from this screen at any time. After reviewing your watering times, click "Save Schedule" to save your baseline schedule for each controller. **Note that schedules must be saved individually to each controller, or any changes will be lost. Cyber-Rain strongly recommends that you monitor your landscape conditions over the next two weeks and adjust your baseline watering schedule if your plants are looking too dry or too wet.**

Congratulations! You have finished programming your Cyber-Rain XCI Controller.

Cyber-Rain has already made adjustments for tomorrow's watering based on the weather forecast and has communicated this to your controller. You can see how much water you will be saving tomorrow on the Schedule screen.

Basic Operation

Close the window by clicking on the close button (**red X**) on the top right corner of the screen. Cyber-Rain continues to run as a background process, continually monitoring weather conditions and adjusting your watering times to conserve water and save you money.

After the initial setup and scheduling, your Cyber-Rain software runs in the background and is not visible. The only indication of its presence is the icon in the notification area at the bottom right of the screen. This icon changes to reflect the status of your system.

Status	Icon	Description
Normal Operation		Cyber-Rain is running normally.
Weather Hold		The umbrella indicates that watering will be stopped due to rain or other weather conditions.
Lost Connection		The red disconnected wire indicates that the wireless connection to the Cyber-Rain controller has been lost.

You can open Cyber-Rain by double clicking the Notification Icon. Right clicking on the Notification Icon allows you to open the main screen, enter the settings screen (which re-launches the startup wizard), or close the application.

Closing the Software

When you are finished using the Cyber-Rain software, it is best to exit Cyber-Rain by clicking the **red X** on the upper right of the screen. This way Cyber-Rain continues to check the weather and update your controller so that your water savings are optimized.

If you wish to completely exit the application, select "Exit" from the File menu at the upper left corner. Please note that this is not recommended as the Cyber-Rain controller will not receive regular adjustments based on weather conditions. **Consequently, water use will not be optimized.**

Schedule View

At the top of the "Schedule for Controller" screen, you will see the name of the controller. The name is normally displayed in **green** text. **Orange** text indicates that the USB access point is disconnected. **Red** text indicates trouble communicating with the controller. The color changes to **blue** when the USB access point is communicating with the controller.

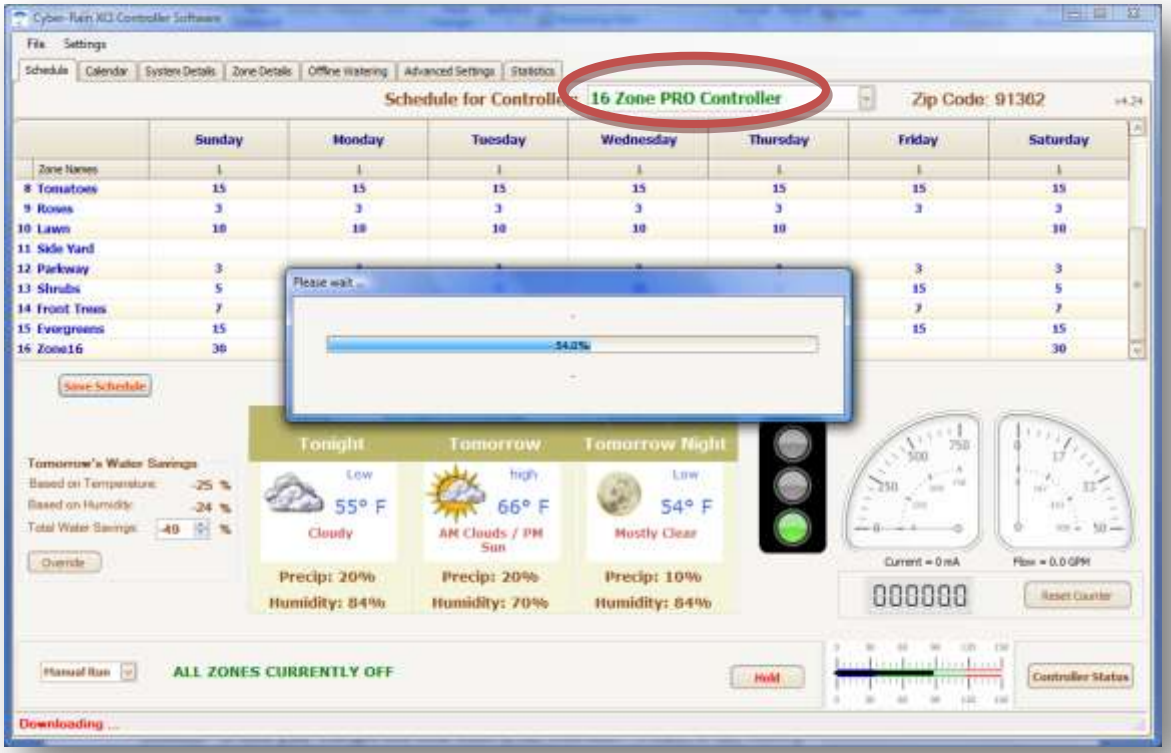


Figure 5: Schedule Tab

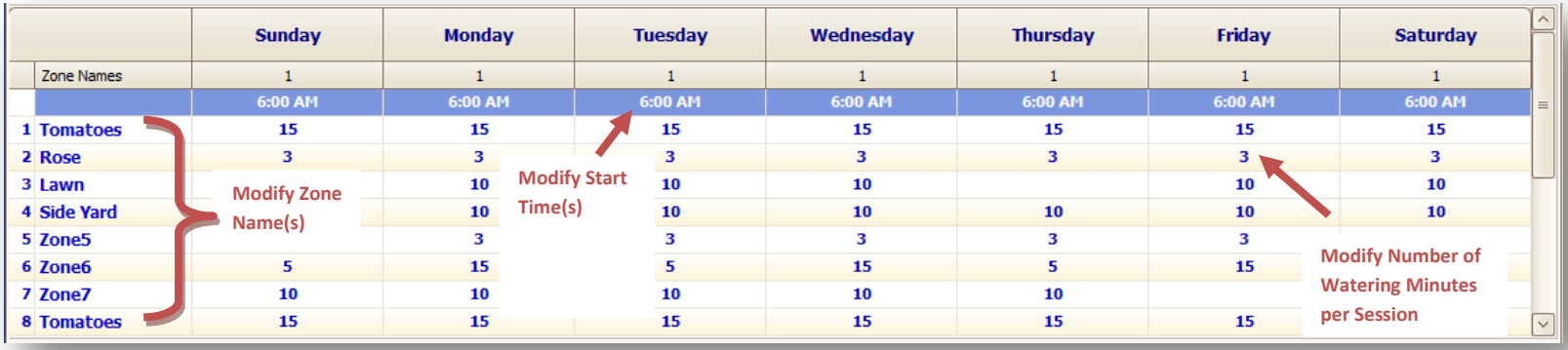
cyber rain

Modifying Your Baseline Watering Times

The middle portion of the Schedule for Controller screen displays your baseline watering schedule for the hottest days of the year. Cyber-Rain will automatically adjust this baseline watering schedule each day based on the forecasted temperature, humidity and rainfall for your zip code. If you completed the Smart Scheduling Wizard, on the left you will see the names of the zones as you assigned them. On the right, you will see the watering times in minutes for each start time for each day and zone. If you did not complete the Smart Scheduling Wizard, you can enter your baseline watering schedule here. Note these are watering times for the HOTTEST days of the year.

You can easily change any zone name by simply typing over the current entry. To adjust watering minutes, simply select the desired day and zone. Press the up button to add minutes and the down button to subtract minutes or simply type your desired number of minutes.

You can also change the start times for each watering cycle as needed by selecting the time. Note the Smart Scheduling Wizard assumes only one sprinkler start time per day. If you have selected multiple start times, you can manually spread the recommended watering minutes by zone across the start times.



		Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	Zone Names	1	1	1	1	1	1	1
		6:00 AM	6:00 AM	6:00 AM	6:00 AM	6:00 AM	6:00 AM	6:00 AM
1	Tomatoes	15	15	15	15	15	15	15
2	Rose	3	3	3	3	3	3	3
3	Lawn		10	10	10		10	10
4	Side Yard		10	10	10	10	10	10
5	Zone5		3	3	3	3	3	
6	Zone6	5	15	5	15	5	15	
7	Zone7	10	10	10	10	10		
8	Tomatoes	15	15	15	15	15	15	

If you wish to modify watering times for multiple days at once, right click above the Zone Name.

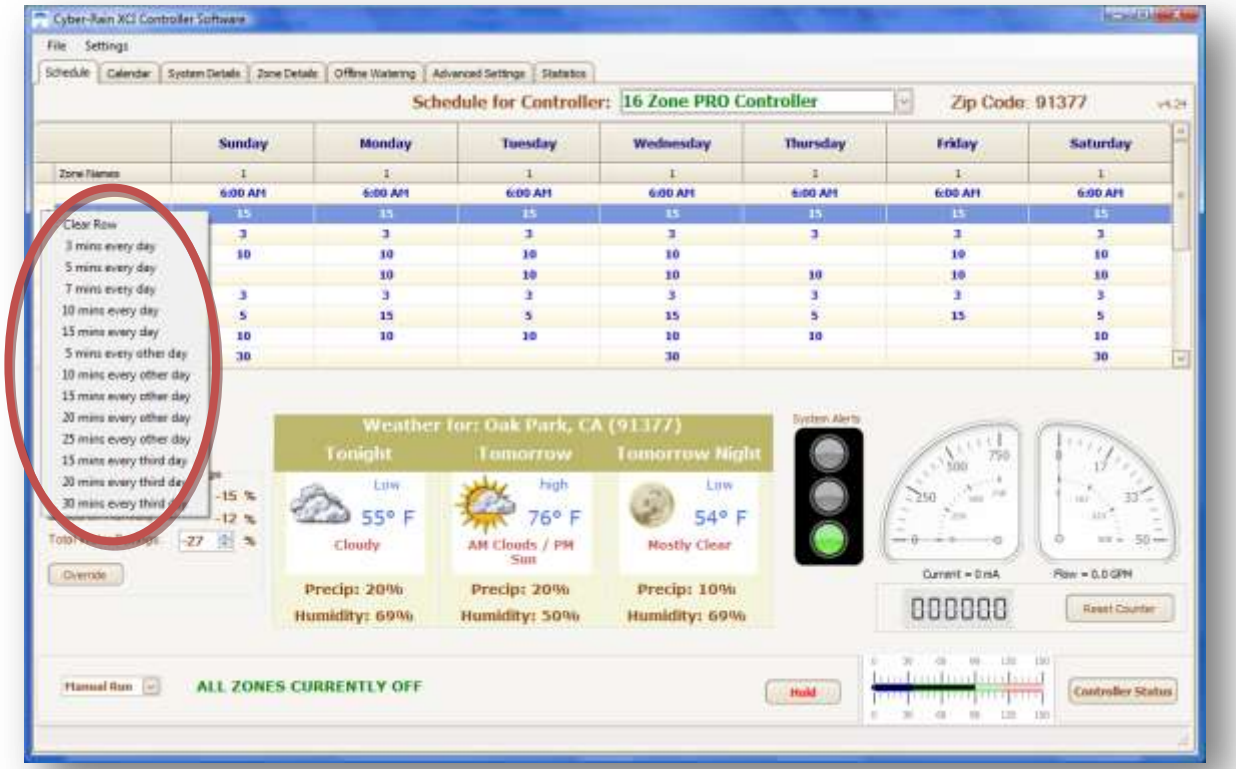


Figure 6: Right click on the zone name to set run-times for the entire week

After making any changes, click "Save Schedule" to save your changes and send them to the controller.

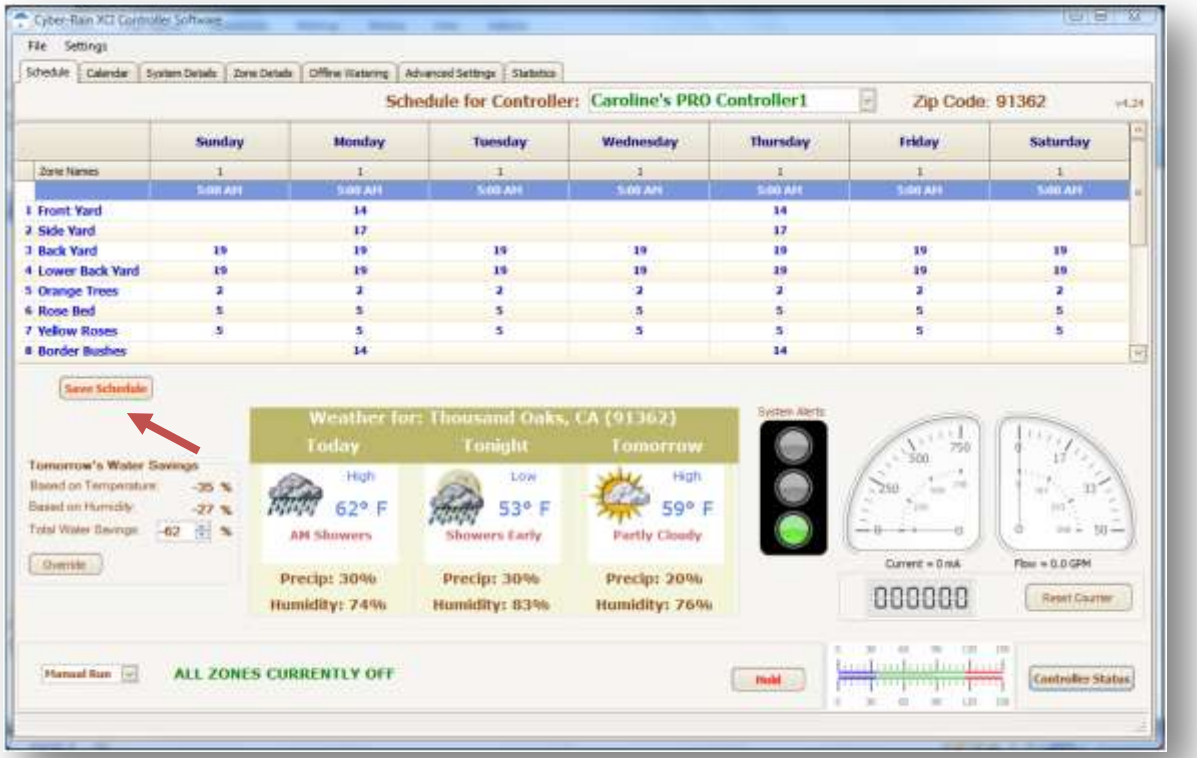
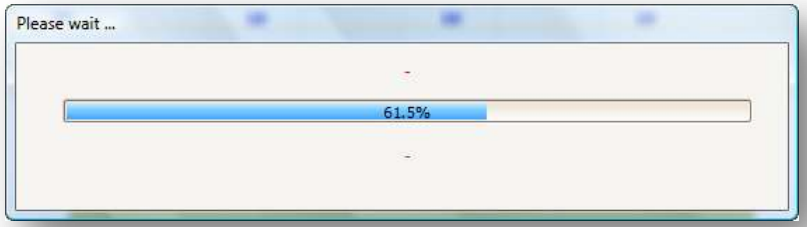


Figure 7: Click 'Save Schedule' to apply changes

When Save Schedule is selected, the baseline watering schedule is sent to your controller. A progress bar shows the status of the transfer.



The bottom portion of the screen shows the local weather forecast and the corresponding adjustments to your watering times. For example, the figure below shows a 49% reduction in watering is scheduled for the following day. You can adjust this percentage by changing the Total Water Savings value, clicking the "Override" button, and then clicking the "Save Schedule" button.

Figure 8: Weather Panel and Water Savings

If rain is in the forecast, the system will automatically stop all watering until the rain clears. If you wish to override this rain hold, you can click the "Override" button. This will override the rain shutoff until the following day.

Figure 9: Rain Hold Caused by Rain Forecast

When rain is forecast, the Notification Icon will change to an umbrella , and the display on the controller will also indicate that all watering has stopped due to rain.

Figure 10: Rain Hold on Controller Display

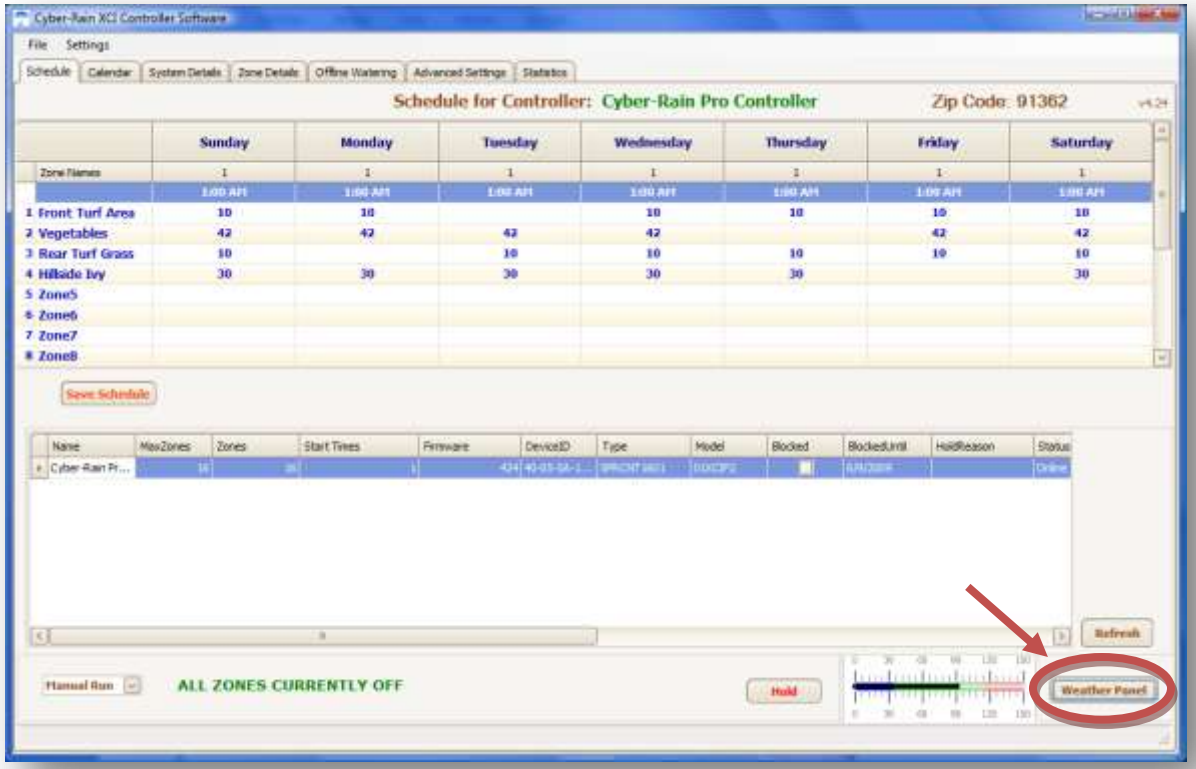
If you have installed an optional rain sensor, Cyber-Rain will provide double protection against watering when it is raining. If rain has been detected by the sensor, it will skip all scheduled watering events and state RAIN SENSOR HOLD. This hold will remain in effect until the rain sensor releases it and after any time delay you have added in the Cyber-Rain set-up. See the Using a Rain Sensor section in this User Manual for more details.

On the bottom left hand side of the Schedule screen there is a “Manual Run” menu (Figure 1A). Click on this menu to perform a manual run. Move the slider bar at the top of the menu (B) to change the duration of the cycle. Check the box to the left of each zone name (C) to activate the corresponding zone. The “Check All” and “Clear All” buttons on the bottom allow you to quickly select or deselect all zones. Click the Run/Cycle button (D) to begin the manual run.

Figure 11: Manual Run Menu

Controller Status Panel

On the bottom right hand side of the screen there is a button that toggles back and forth between “Controller Status” and “Weather Panel”. If you click on “Controller Status” you will see a list of the current controllers you have connected and their status in place of the weather panel. Note that the last three columns are used to assist with technical support (should it be required). To return to the weather panel, simply click on the button again (which reads “Weather Panel”).



The User Manual can be accessed at any time while viewing the Cyber-Rain Schedule screen. Press the “User Manual” button at the top right corner of the screen to open the manual.

Gauges and Meters (Pro Model Only)

The Schedule tab includes many tools for monitoring your controller and sprinkler system:

Traffic Light: This indicates the status of alerts. A green light means no alerts have been triggered. A yellow light means that an alert has been triggered but Cyber-Rain is continuing to water all zones. A red light generally means that an alert has been triggered and watering has been held for one or all zones. Details on what alerts have been triggered can be found in the System Alerts section of the System Details tab. For more information on alerts, see the **Controller Alerts** section of this User Manual.

Current Meter Gauge: This measures the current going through an active valve. If your sprinklers are not running, the current meter should indicate no current.

Flow Meter Gauge (optional)**:** This indicates the rate of water flow going through an active valve. A flow meter must be installed and the Flow Meter Installed box checked in the System Details tab for the flow meter gauge to be visible. See **Installing and Using a Flow Meter** in this User Manual for further details.

Flow Meter Counter (optional)**:** This shows aggregate flow for all zones if a flow meter is installed. It operates similar to an odometer and can be reset by pressing the reset button. A flow meter must be installed and the Flow Meter Installed box checked in System Details tab for the flow meter gauge to be visible.

Controller Temperature Gauge: This indicates the internal temperature of the controller. An alert will be triggered if the controller temperature is outside of the green area. If the temperature is in the blue area, there is a risk of pipes freezing. If it is in the red area, there is a risk of controller malfunction. See the **Controller Alerts** section for more information.

System Alerts Warning: If an alert has been detected, a notification will also appear at the bottom of the screen directing the user to refer to the System Details tab for more information. See **Controller Alerts** section for more information on types and causes of alerts.

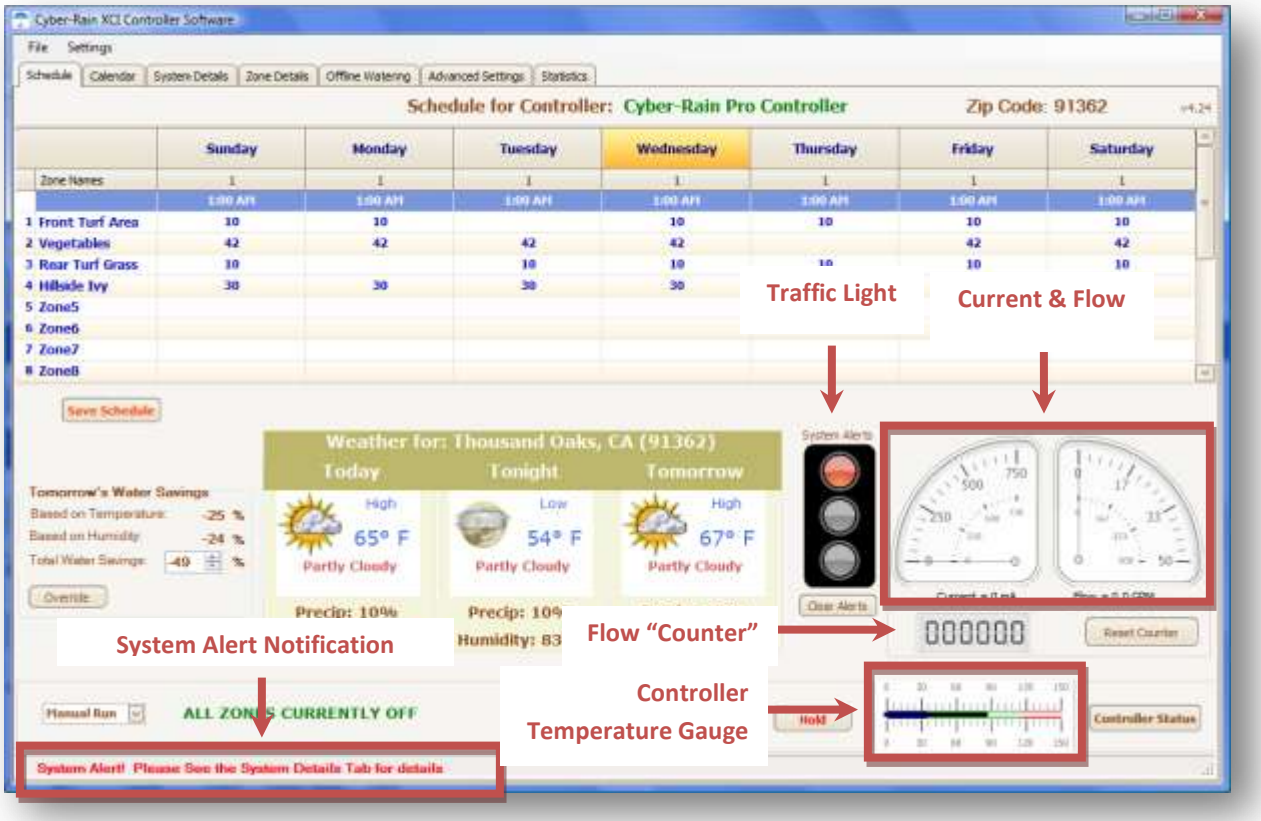
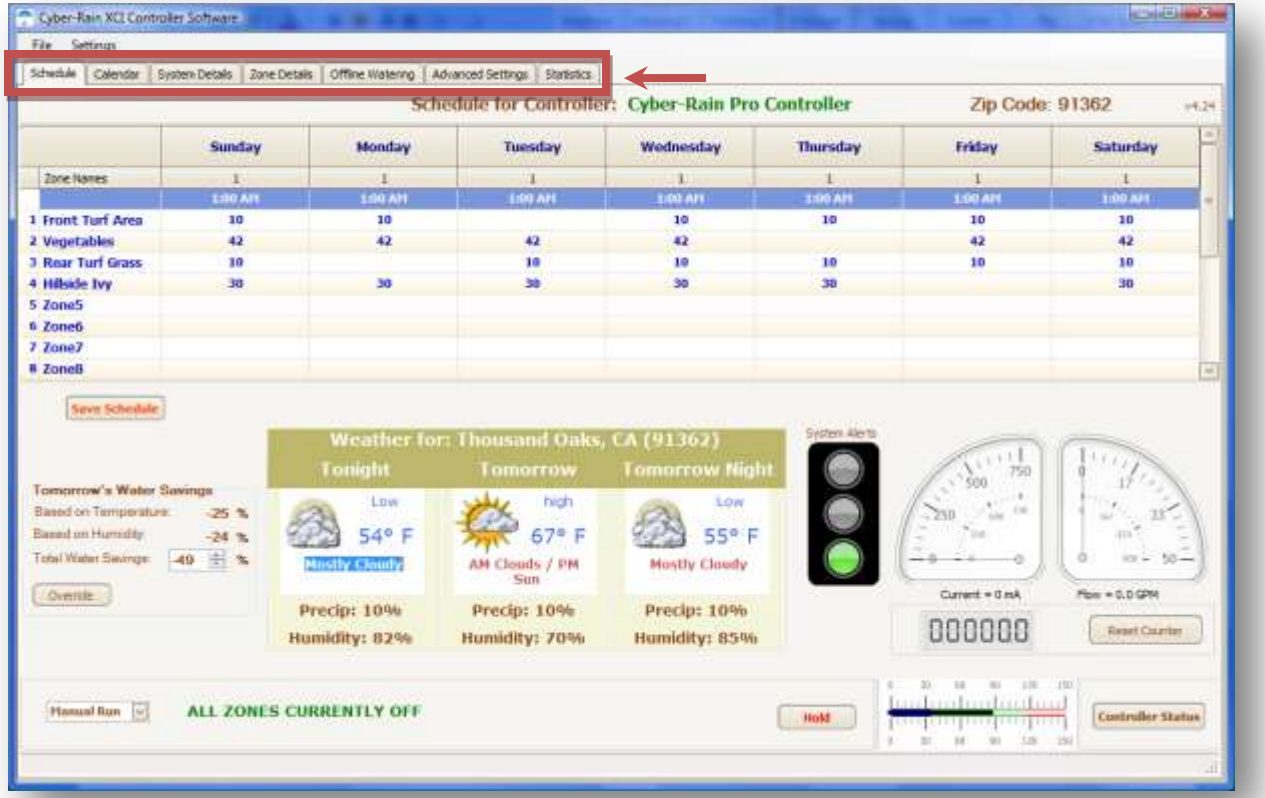


Figure 12: Gauges, Meters, and Alerts

cyber rain

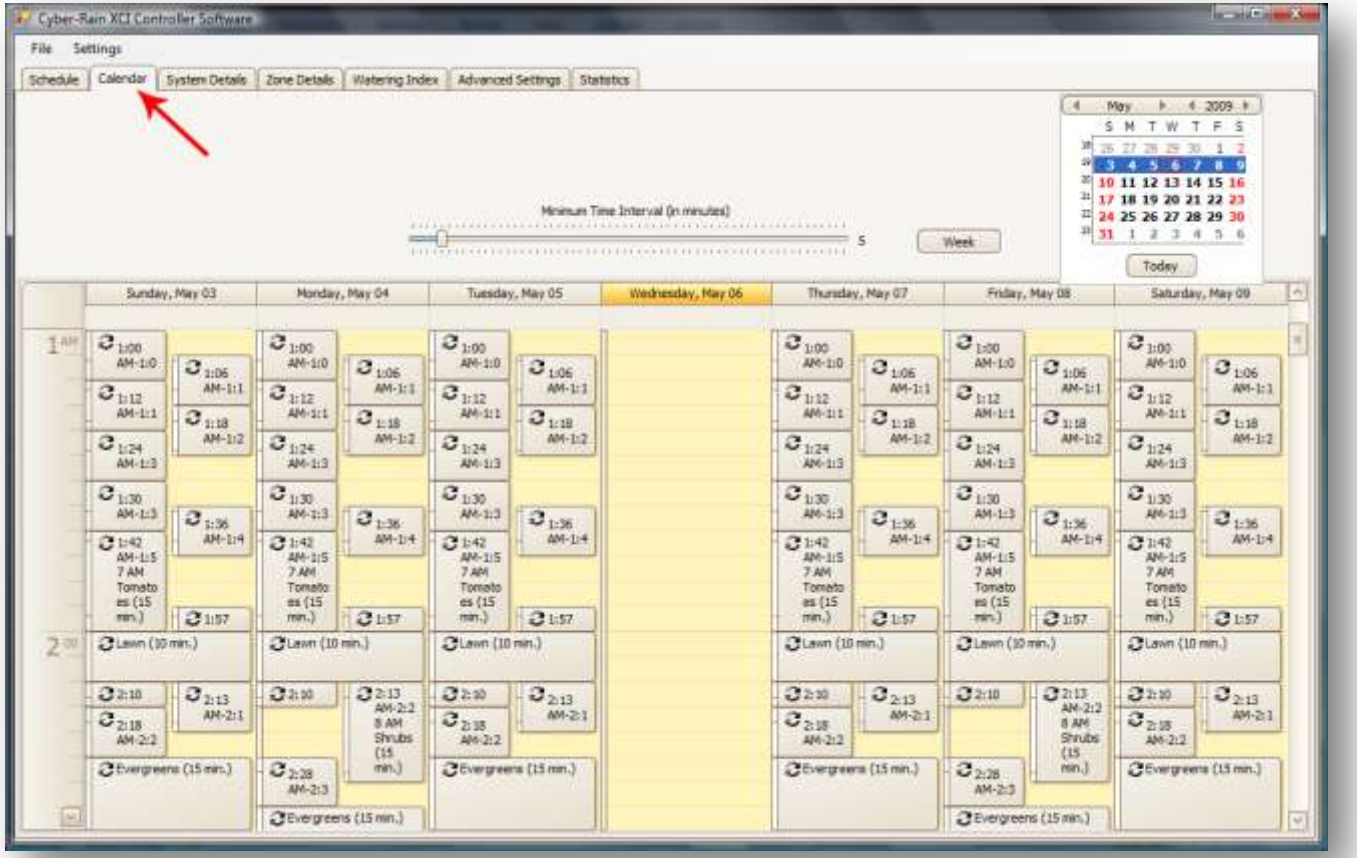
Additional Features

The menu tabs on the top of the screen allow you to access additional features and information.



Calendar View

Click on the “Calendar” tab to view an event calendar for your schedule. This calendar is for informative purposes only. *Changes to your schedule cannot be made from the calendar.*



Dragging the “Minimum Time Interval” slider to the left or the right adjusts the duration of time that is displayed on the calendar for each day. The monthly calendar on the top right corner can be used to view future weekly schedules.

Click on the “System Details” tab to view or make changes to your system’s configuration.

Note: The figure below shows the layout for a Pro Model controller with optional rain sensor and flow meter installed. A rain sensor can be installed with both the Standard and Pro Models, but the Rain Sensor Options are only visible after checking the “Do you have a Rain Sensor Installed” box. Current sensing, flow sensors, and alerts are only available on the Pro Model controller.

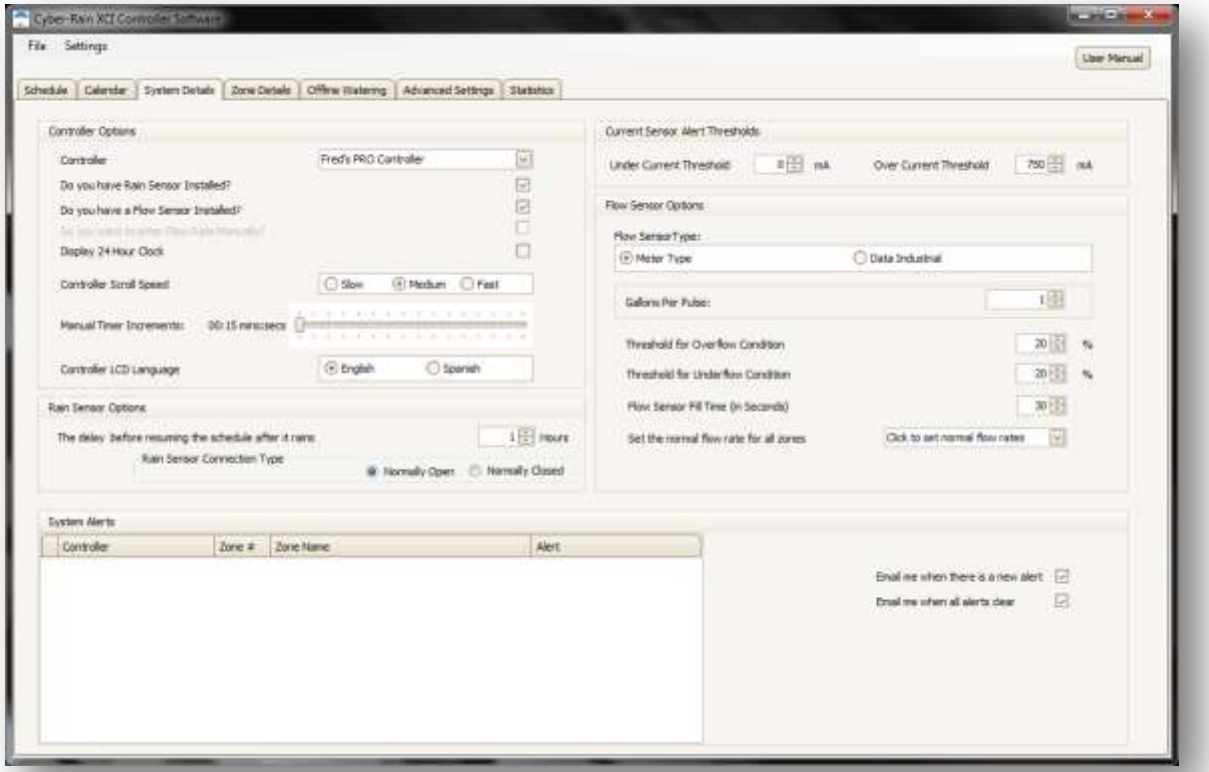
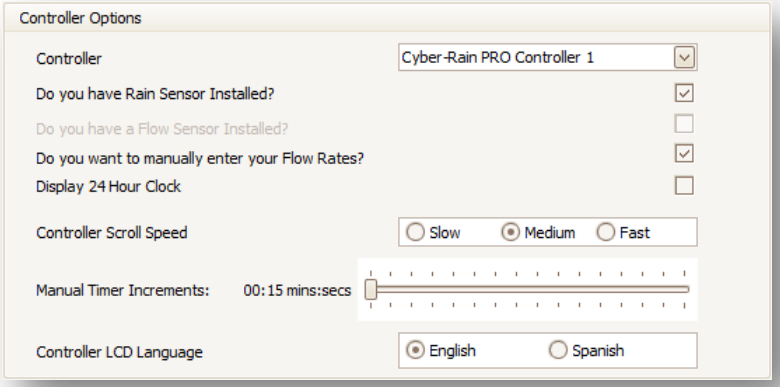


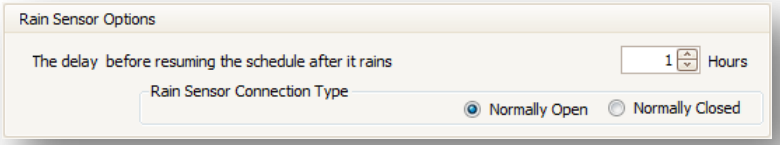
Figure 13: System Details (Pro Version, Rain Sensor and Flow Sensor Installed)

Controller Options: These options allow the user to customize each controller's configuration.



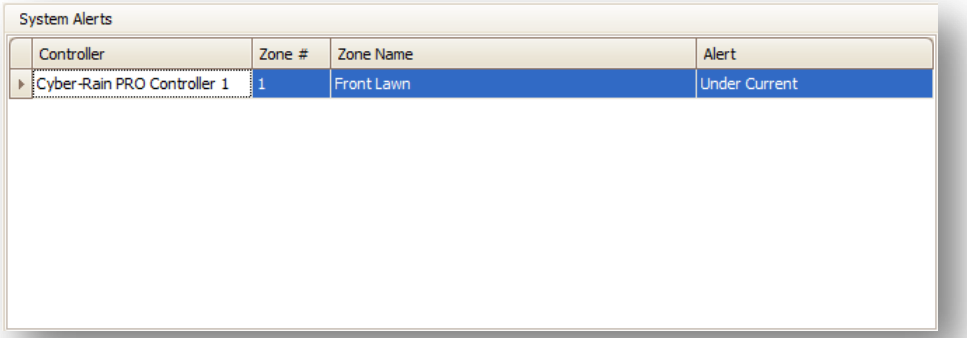
- ***Controller:*** This dropdown menu allows the user to toggle between controllers (applicable only for multiple controllers controlled by a single PC).
- ***Rain Sensor Installed:*** If a compatible rain sensor in installed and connected to the Cyber-Rain controller, make sure the "Do You Have a Rain Sensor box?" is checked.
- ***Flow Sensor Installed*** *(Pro Model Only)**:*** If an optional flow sensor is installed, check this box to enable the Flow Sensor Options box. See further flow meter setup instructions in the **Flow Sensor Options** section below and the Installing and Using a Flow Sensor section of this User Manual.
- ***Enter Flow Rate Manually:*** Allows the user the ability to provide water flow-rate information that Cyber-Rain can use to estimate water usage for each watering event when a flow sensor is not installed. See **Manually Enter Flow Rates** section below for more details on manually setting flow rates.
- ***24 Hour Clock:*** This feature toggles the time between a 12 hour and 24 hour clock system on the controller.
- ***Scroll Speed:*** This setting adjusts how fast the LCD screen on the controller will scroll text.
- ***Manual Timer Increments:*** This feature adjusts the time increment for manually running sprinkler zones when pressing "Up" or "Down" on the controller's keypad. For example, if 15 seconds is selected, each press of the up arrow on the controller will add 15 seconds of watering time for that zone. The watering schedule is not affected by this setting.
- ***Controller LCD Language:*** Toggles the language displayed on the controller between English and Spanish.

Rain Sensor Options: This box appears when you have checked that a rain sensor is installed in the Controller Options box.



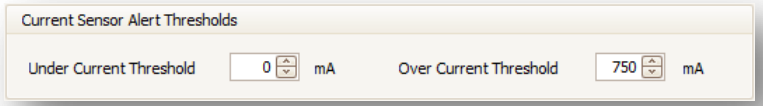
The time delay (in hours) before the system resumes watering after the rain sensor hold is no longer active can be adjusted. The user must also select the type of rain sensor installed (normally open/closed). Most rain sensors are normally open when not activated, so this is Cyber-Rain's default setting. Consult the rain sensor's manual to determine its connection type. See the **Installing and Using a Rain Sensor** section for more information.

System Alerts *(Pro Model Only)***:** System Alerts are displayed in this section.



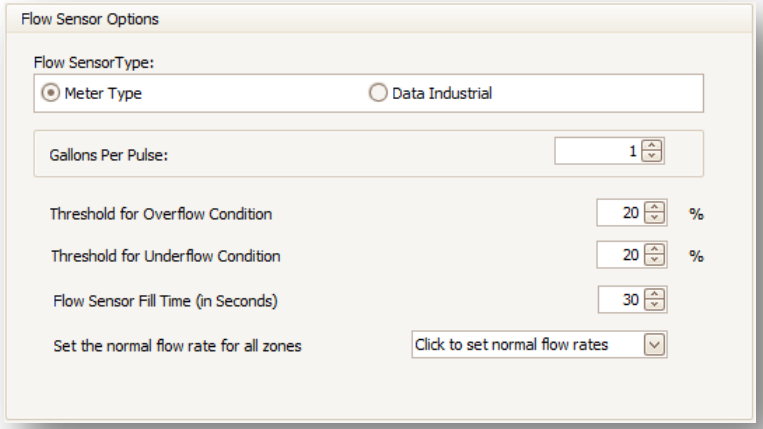
An alert will be triggered if Cyber-Rain detects an electrical current, water flow, or temperature outside of normal operating ranges. The alert details will include the controller name, zone name, and the type of alert. See the **Controller Alerts** section for more information on the different types of alerts and the potential causes. Alerts can be cleared by pressing the Clear Alerts button. The user will receive emails when alerts are triggered and when all alerts have been cleared. *Note that you can opt out of email alerts by un-checking the boxes on the bottom right.*

Current Sensor Alert Thresholds *(Pro Model Only)***:** Cyber-Rain automatically measures the electrical current flowing through each valve while it is in use, and will alert the user of abnormally high or low measurements. Current alerts can be helpful in determining if a valve wire hasn't been inserted properly or is failing. The default settings for over/under current alerts are set to a wide range to avoid unwanted alerts.



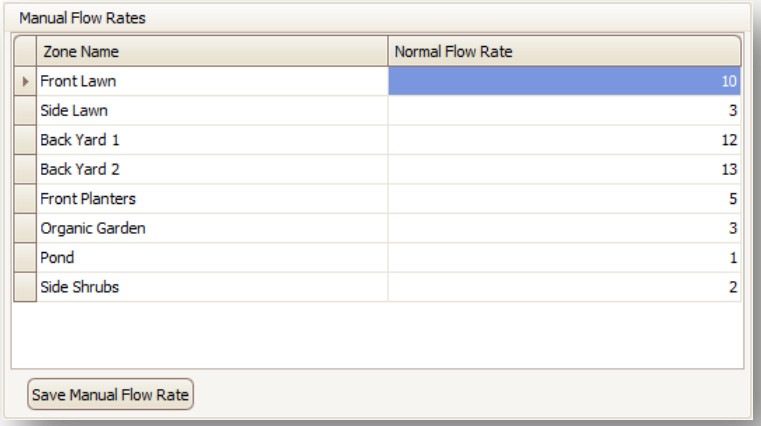
To activate low current alerts, set an under-current threshold above 0 and safely below the typical current levels of your valves. The existing current levels can be read by manually running a zone and watching the current gauge on the Schedule Tab. An under-current threshold of 150 milliamps is generally appropriate for most residential settings. The default over-current alert threshold is 750 milliamps, which should be suitable for most installations. **Cyber-Rain will stop watering the zone when a high current alert has been tripped, so the threshold should be set with care.** See **Controller Alerts** section for more details.

Flow Sensor Options *(Pro Model Only)***:** This box appears when you have checked that a flow meter is installed in the Controller Options box. If a compatible flow sensor is installed and connected to the Cyber-Rain controller, this feature will monitor the flow of water through the irrigation system and provide under/overflow alerts and automatic watering holds.



For the flow metering to function correctly, the sensor type, calibration settings, fill time, and over/underflow conditions settings must be set. Calibration settings are specific to flow meters, and typically can be found on the box or through the manufacturer's documentation. **A normal flow rate much be set for each zone for alerts to be triggered.** **Note that Cyber-Rain will stop watering the zone when a high-flow rate has been detected.** Refer to **Installing and Using a Flow Sensor** and **Controller Alerts** sections of this User Manual for more details.

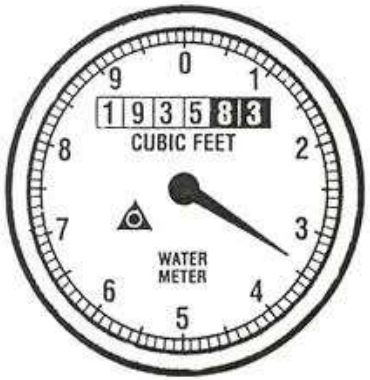
Manually Enter Flow Rates: This section is visible when the Manually Enter Flow Rates option box has been checked. The feature allows Cyber-Rain to report water savings and usage in *gallons* in the Water Usage Reports section of the Statistics tab.



The flow rate of each zone can be estimated using the local utility's water meter using the methodology below. Cyber-Rain will then use the entered flow rates when reporting on all watering events. These flow rates can be modified as needed.

Most utility water meters in the United States use the *hundreds of cubic feet (CCF)* unit for reporting water use. The user can confirm this at the water meter, or with the water agency. There are 748 gallons of water in 1 CCF.

Remember to turn off all other sources of water flow at the site prior to measuring manual flow rates. This includes both outdoor and indoor watering, such as toilets or clothes washers. Otherwise, your flow estimates will not be accurate.



Write down the initial reading. Then perform a manual run on the first zone for 5 minutes (unless the zone is a drip system, in which case 20 minutes is recommended). After the run is complete, write down the new water meter reading. Use the following instructions to calculate the zone's flow rate (in Gallons per Minute):

1. Subtract the initial meter reading from the final meter reading.
2. Multiply the result by 748 (1 CCF = 748 Gallons).
3. Divide the result by 5 *(# of minutes)*.
4. Enter in the result into the software.
5. Repeat for the next zone.

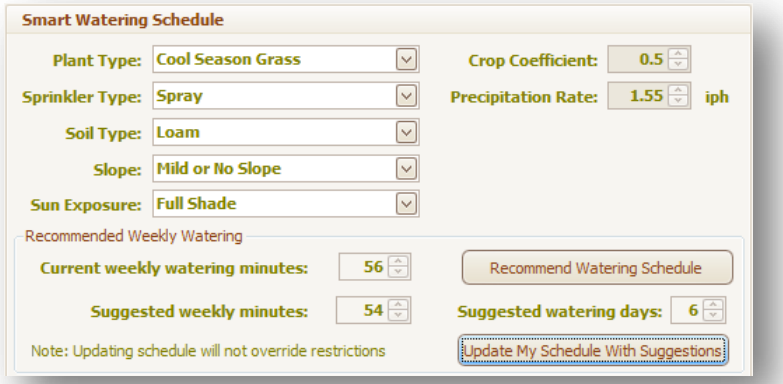
Zone Details

The “Zone Details” tab can be used to adjust the settings of a particular zone.

Controller/Zone: These fields allow you to rename your controller(s) and/or zones.

- ***Controller:*** This dropdown menu allows you to toggle between controllers (applicable only for multiple controllers controlled by a single PC).
- ***Zone:*** This dropdown menu allows you to toggle between zones on the selected controller.
- ***Controller Name/Zone Name:*** These fields are pre-populated with the names used during the Smart Scheduling Wizard. They can be edited and will be automatically updated on the schedule page and controller.
- ***Wire Color/Striped*** *(optional)**:*** Use to store information about the zone wire’s appearance.

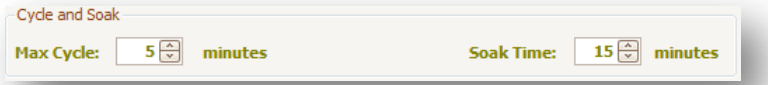
Smart Watering Schedule: This section contains a compact version of the Smart Watering Schedule Wizard that is run during the Setup Wizard. Enter details about your landscape and Cyber-Rain will recommend a baseline watering schedule using your description and zip code.


Smart Watering Schedule
Plant Type: Cool Season Grass
Crop Coefficient: 0.5
Sprinkler Type: Spray
Precipitation Rate: 1.55 iph
Soil Type: Loam
Slope: Mild or No Slope
Sun Exposure: Full Shade
Recommended Weekly Watering
Current weekly watering minutes: 56
Recommend Watering Schedule
Suggested weekly minutes: 54
Suggested watering days: 6
Note: Updating schedule will not override restrictions
Update My Schedule With Suggestions

- ***Landscape Description:*** If you completed the Smart Scheduling Wizard during set-up, these will be pre-populated based on your selections. Watering recommendations can be updated here. Click each of the following options and use the pictures to select the most appropriate option for your landscape, and then select Recommend Watering Schedule. Note you will need Internet access.
    1. **Plant Type:** Select the type of plants covering the majority of the zone. If you would like to manually enter the crop coefficient, select custom and type the value.
    2. **Sprinkler Type/Precipitation Rate:** Select your emitter type. If you would like to manually enter the precipitation rate, select custom and type the value.
    3. **Soil Type:** Select your soil type. Sandy is loose, clay is dense/clumpy and loam is in between. If you are uncertain, select loam.
    4. **Sun Exposure:** Select the amount of sun the majority of the zone receives during the day.
    5. **Slope:** Select the amount of slope for the majority of the zone.

- ***Recommend Watering Schedule:*** Press this button to run Cyber-Rain's Smart Scheduling Wizard to compute suggested baseline watering minutes for your zone. **Note: you need Internet access for this recommendation.**
    1. **Recommended Weekly Watering:** Cyber-Rain will recommend how many minutes and days per week you should be watering each zone based on the parameters above.
    2. **Currently Weekly Watering Minutes:** Indicates the number of minutes you are watering this zone according to your current baseline schedule.
    3. **Click Update Schedule with Suggestions to reflect these new watering times in your schedule.** Cyber-Rain will also automatically send this new schedule to your controller.

Cycle and Soak: When the Smart Scheduling Wizard is run, Cyber-Rain will automatically enable the Cycle and Soak feature.



This feature cycles the watering schedule on and off for dense soil or a sloped landscape to reduce *water run-off*. Water run-off is the wasted water that flows off saturated soil. Cycle and Soak divides the watering sessions on your schedule into alternating "on" *(Cycle)* and "off" *(Soak)* periods so that the soil has time to absorb the water. The zone's cycle time and soak time can be adjusted. The *total* watering time will not change, but will be divided into sessions, allowing time for the soil to absorb water in between applications. The cycles will *not* be visually reflected on the schedule or calendar pages, but will be transmitted to your controller. Refer to the **Cycle and Soak** section of this manual for more information.

Fertilizer Watering: The fertilizer watering setting can be used to temporarily increase watering following fertilization or planting new grass. Simply enter the percentage of watering to increase and number of days to apply the increase.

Scheduling Overrides: These options allow the user to override certain features of the Cyber-Rain controller.

- **Zone Hold:** This feature allows you to put designated zones on hold. When activated, the zone will not be water for the designated period of time. To utilize this feature, check the box and set the "Hold From" and "Hold Until" fields. *(Note: If you wish to put all of a controller's zones on hold, use the Hold button on the Schedule tab.)*
- **Ignore Weather:** Checking "Ignore Weather" overrides the automatic weather adjustments for the zone. **Enabling this function overrides the water conservation utility of this smart controller, and is not recommended under normal circumstances.**

Flow Sensor Options *(Pro Version)***:** This box can be used to compare your last observed flow rate for a zone to the normal flow rate set for the zone. Normal flow rates can be set from this page by manually entering a value, or by using the last observed rate by pressing the "Use Observed as Normal Flow" button.

Zone Images: Images of each zone can be added to replace the stock images provided. Press the "Load Images" button to select the image. GIF, BMP, JPG, and PNG file types are supported.

Offline Watering

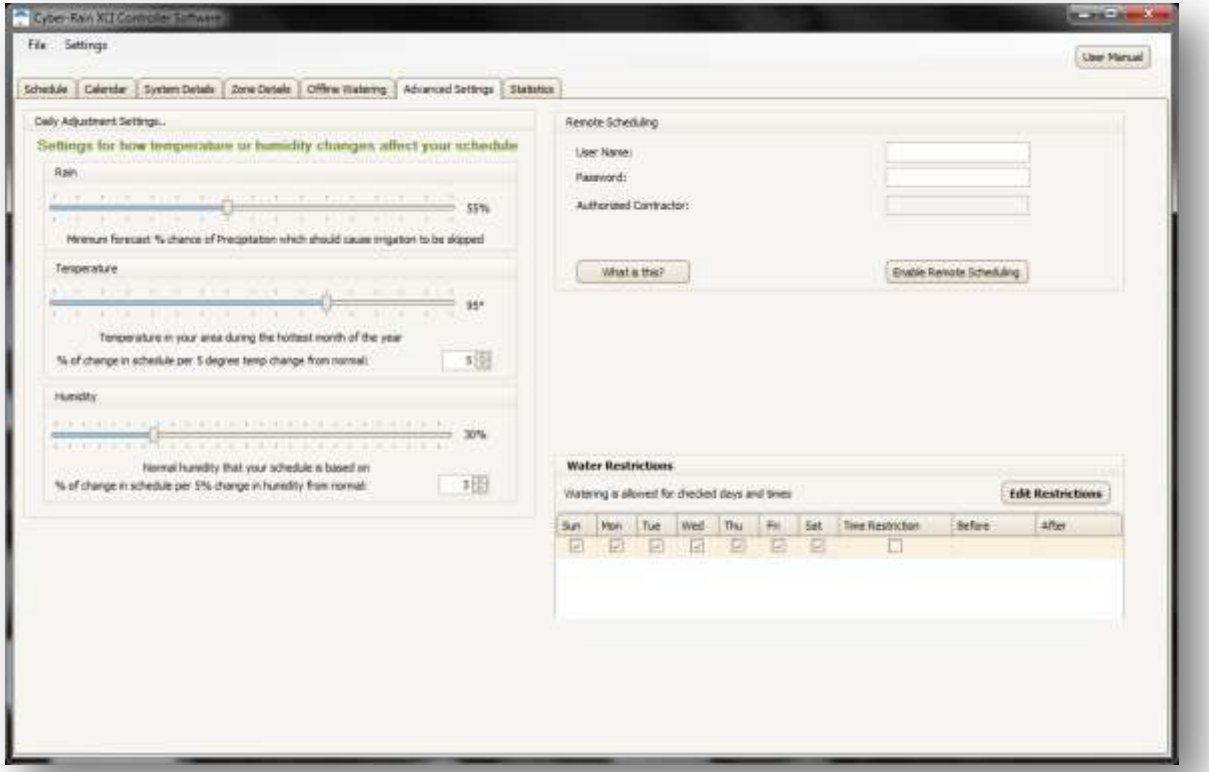
The “Offline Watering” tab displays a graph that shows offline watering adjustments made by the controller.

Watering times are normally calculated automatically based on the weather forecast for the zip code provided. However, if the computer is not on for more than 24 hours or does not have an internet connection, Cyber-Rain will default to a watering adjustment based on your historical weather patterns. **The watering adjustment is automatically customized for your area based on the zip code entered in the setup wizard.**

The Offline Watering Adjustments displays the watering reductions based on the historic seasonal watering pattern as calculated by the expected evapotranspiration for your zip code. These percentages are average reductions to your baseline watering schedule on your Schedule tab, which contains the watering minutes for the hottest months of the year. For example, in the figure above, the hottest months are July and August, which is why the **green** line of the watering index is at 100%. During the month of January the area has historically needed only *30%* of the water used during the summer, so the default for January is 30% (as indicated by the green line.) If the schedule was set to water a zone for 10 minutes *and* the PC is offline in January, the controller will only water that zone for 3 minutes. The default watering adjustment can be adjusted by first selecting the month (at the top), and then using the slider on the right to set the default water reduction for that month.

The **orange** line represents typical watering patterns for households without smart sprinkler controllers. This line is for informational purposes only.

The advanced settings tab gives access to the more advanced options of the controller.



Daily Adjustment Settings: On the left side of the screen are the settings that determine how sensitive your watering will be to precipitation, temperature and humidity. Typically these settings do not need to be adjusted, as they have been calculated to deliver the optimal amount of water under varied conditions. Some contractors and advanced users may wish to fine tune these values.

Remote Scheduling: Remote scheduling gives the user the ability to monitor and adjust the Cyber-Rain schedule from any location where internet access is available. In addition, an authorized landscape maintenance contractor can be authorized to monitor and adjust the schedule remotely. **Note that the PC which is controlling your Cyber-Rain system will need to be powered ON and connected to the Internet to receive schedule updates, and**

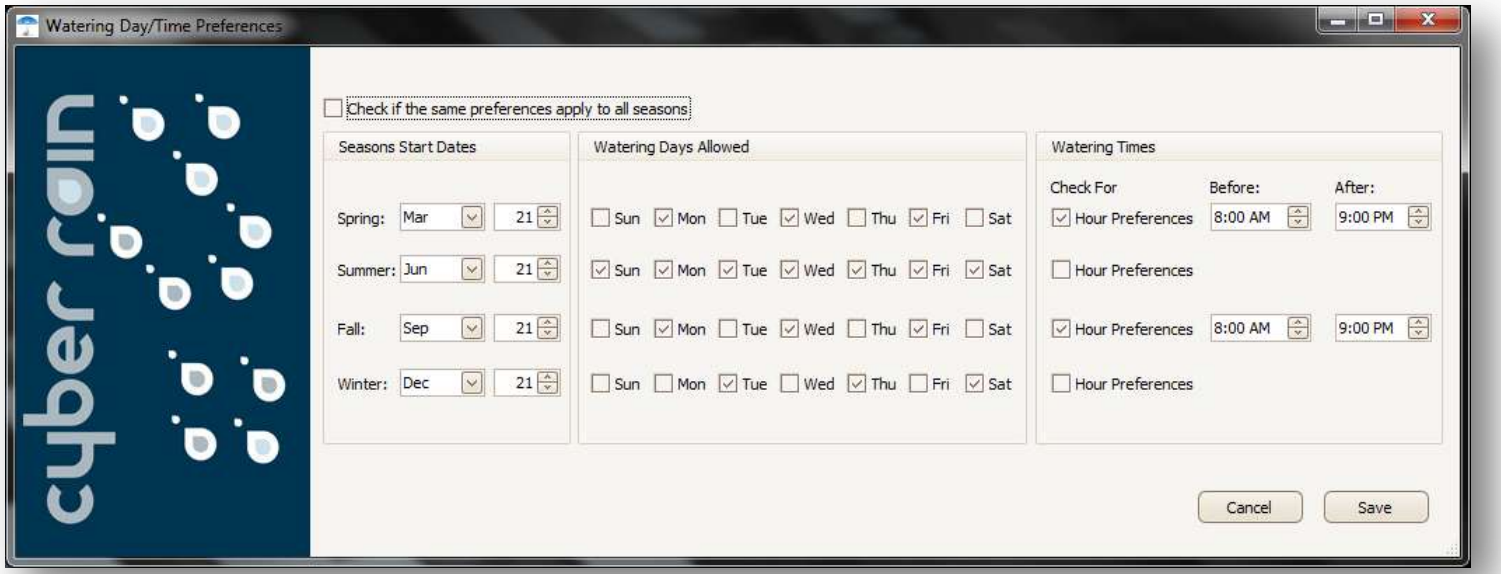
these updates will be reflected after the Cyber-Rain's next hourly check of the weather, NOT in "real time." When Cyber-Rain receives any remote schedule changes, it will automatically update the irrigation schedule to reflect these changes, and communicate the new schedule to the controller. For more information on Remote Scheduling, refer to the **Remote Scheduling** section of this User Manual.

Watering Restrictions/Preferences: Water municipalities sometimes restrict the days of the week or the hours of the day that sprinklers can be turned on. Cyber-Rain offers a simple way to comply with these watering restrictions by allowing you to select the days or time periods during which landscape watering is permitted in your area. This feature can also be used to set watering day and time preferences, such as setting a weekly 'mow day.' Cyber-Rain defaults to allow watering on all days, which is indicated by all of the boxes being checked.

To modify allowed watering days and/or times, click Edit Restrictions, and a popup will appear.

Click on the boxes next to the appropriate days select which days watering is *allowed*. If watering is not desired during particular hours, check the Hour Preferences box, and indicate what time that watering is allowed, before and after.

In some locations, watering restrictions change based on the time of year. To modify your schedule for compliance with seasonal "day" and "hour" **watering restrictions**, click to *deselect* the "same restrictions apply to all seasons" option and input the information for "season start dates," "week day restrictions" and "hour restrictions," as necessary. Click on the "Save" button when you have made all necessary adjustments.



After changing restrictions you will be prompted to rerun the Smart Scheduling Wizard to apply the new restrictions to the schedule.

Statistics

The “Statistics” tab contains Cyber-Rain’s Water Usage Charts, Activity Log, and Water Usage Reports.

The Water Usage Chart graphically represents the water used and water saved by the Cyber-Rain system.

The Water Usage Chart can display the water usage information by minutes (default) or by gallons *if a flow meter is used or the flow rate is entered manually (See **Manually Enter Flow Rate** section).* The area of the graph colored **orange** represents the minutes (or gallons) used, and the area in **green** represents the saved watering minutes/gallons. Water is considered “saved” when a zone was scheduled to run, but the runtime was reduced due to weather conditions. The usage chart can be displayed for the past week, month, or year to date (shown above).

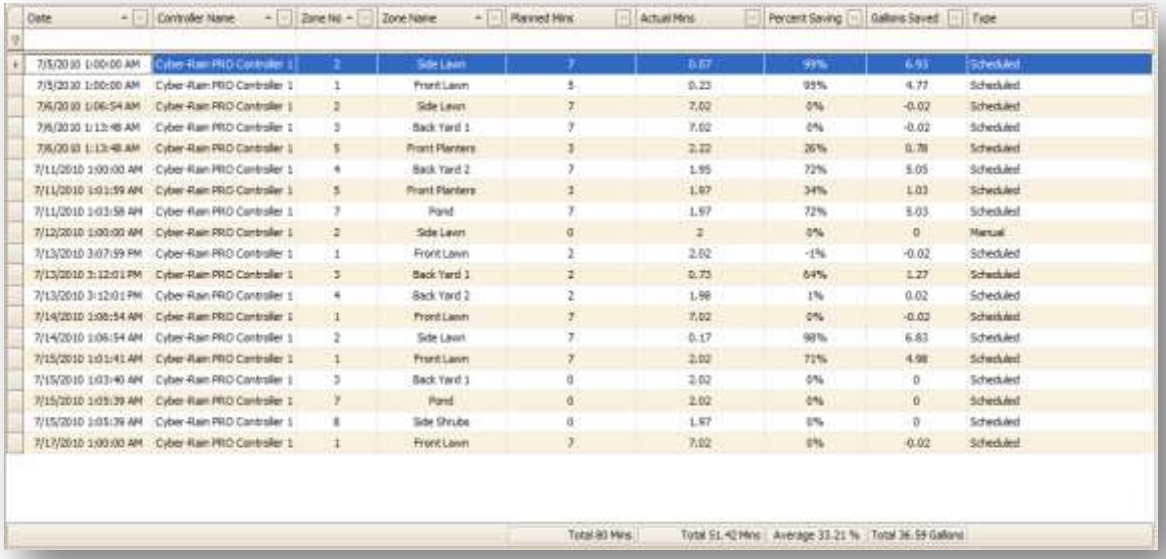
The Activity Log shows the watering activity of each controller.

Date Time	C	Controller	Z	Zone	Value	Type
7/29/2010 12:06:45 PM	1	Cyber-Rain PRO Controller 1		ALL ZONES OFF		
7/29/2010 12:06:46 PM	1	Cyber-Rain PRO Controller 1	1	Front Lawn	118.34	Scheduled
7/29/2010 12:06:50 PM	1	Cyber-Rain PRO Controller 1	1	NORMAL CURRENT EVENT	0.00	
7/29/2010 12:08:44 PM	1	Cyber-Rain PRO Controller 1		ALL ZONES OFF		
7/29/2010 12:08:44 PM	1	Cyber-Rain PRO Controller 1		ALL ZONES OFF		
7/29/2010 12:08:45 PM	1	Cyber-Rain PRO Controller 1	2	Side Lawn	180.00	Scheduled
7/29/2010 12:08:49 PM	1	Cyber-Rain PRO Controller 1	2	NORMAL CURRENT EVENT	0.00	
7/29/2010 12:11:42 PM	1	Cyber-Rain PRO Controller 1		ALL ZONES OFF		
7/29/2010 12:11:42 PM	1	Cyber-Rain PRO Controller 1		ALL ZONES OFF		
7/29/2010 12:11:43 PM	1	Cyber-Rain PRO Controller 1	3	Back Yard 1	240.00	Scheduled
7/29/2010 12:11:47 PM	1	Cyber-Rain PRO Controller 1	3	NORMAL CURRENT EVENT	0.00	
7/29/2010 12:15:39 PM	1	Cyber-Rain PRO Controller 1		ALL ZONES OFF		
7/29/2010 12:15:40 PM	1	Cyber-Rain PRO Controller 1	4	Back Yard 2	180.00	Scheduled
7/29/2010 12:15:44 PM	1	Cyber-Rain PRO Controller 1	4	NORMAL CURRENT EVENT	0.00	
7/29/2010 12:18:37 PM	1	Cyber-Rain PRO Controller 1		ALL ZONES OFF		
7/29/2010 12:18:38 PM	1	Cyber-Rain PRO Controller 1	5	Front Planters	118.05	Scheduled
7/29/2010 12:18:42 PM	1	Cyber-Rain PRO Controller 1	5	NORMAL CURRENT EVENT	0.00	
7/29/2010 12:20:36 PM	1	Cyber-Rain PRO Controller 1		ALL ZONES OFF		
7/29/2010 12:20:36 PM	1	Cyber-Rain PRO Controller 1		ALL ZONES OFF		
7/29/2010 12:20:37 PM	1	Cyber-Rain PRO Controller 1	6	Organic Garden	120.00	Scheduled
7/29/2010 12:20:41 PM	1	Cyber-Rain PRO Controller 1	6	NORMAL CURRENT EVENT	0.00	
7/29/2010 12:22:35 PM	1	Cyber-Rain PRO Controller 1		ALL ZONES OFF		
7/29/2010 12:22:36 PM	1	Cyber-Rain PRO Controller 1	7	Pond	120.00	Scheduled
7/29/2010 12:22:41 PM	1	Cyber-Rain PRO Controller 1	7	NORMAL CURRENT EVENT	0.00	
7/29/2010 12:24:34 PM	1	Cyber-Rain PRO Controller 1		ALL ZONES OFF		

The Activity Log can be cleared by clicking on the “Clear Log” button at the bottom of the screen, and it can be sorted by clicking any of the column names on the top of the log. The log shows the date and time of each event, followed by the controller number and name that the event occurred on, which zone was running at the time of the event, the type of event that occurred, and if the event was due to a scheduled or manual run. Typical events include:

Zone Run	The zone name and the duration in seconds of the watering are shown.
NORMAL CURRENT EVENT	The observed current (in milliamps) is shown.
LINE FILL EVENT	Indicates the flow rate (in GPM) after the fill time is complete.
ALL ZONES OFF	Occurs whenever a zone is shut off.
Rain/Flow Sensor Holds	Rain sensor and flow sensor holds and the time and date they occur will be displayed in the Activity Log.

The Water Usage Report generates a report showing the water usage of the Cyber-Rain system. The report shows the usage in both the minutes and gallons *(if a flow meter is installed or the user has manually entered flow rates)*.



Date	Controller Name	Zone No	Zone Name	Planned Mins	Actual Mins	Percent Saving	Gallons Saved	Type
7/5/2010 1:00:00 AM	Cyber-Rain PRO Controller 1	2	Side Lawn	7	0.07	99%	6.93	Scheduled
7/5/2010 1:00:00 AM	Cyber-Rain PRO Controller 1	1	Front Lawn	5	0.23	95%	4.77	Scheduled
7/6/2010 1:06:54 AM	Cyber-Rain PRO Controller 1	2	Side Lawn	7	7.02	0%	-0.02	Scheduled
7/6/2010 1:13:48 AM	Cyber-Rain PRO Controller 1	3	Back Yard 1	7	7.02	0%	-0.02	Scheduled
7/6/2010 1:13:48 AM	Cyber-Rain PRO Controller 1	5	Front Planters	3	2.22	26%	0.78	Scheduled
7/11/2010 1:00:00 AM	Cyber-Rain PRO Controller 1	4	Back Yard 2	7	1.95	72%	5.05	Scheduled
7/11/2010 1:01:59 AM	Cyber-Rain PRO Controller 1	5	Front Planters	3	1.97	34%	1.03	Scheduled
7/11/2010 1:03:58 AM	Cyber-Rain PRO Controller 1	7	Pond	7	1.97	72%	5.03	Scheduled
7/12/2010 1:00:00 AM	Cyber-Rain PRO Controller 1	2	Side Lawn	0	2	0%	0	Manual
7/13/2010 3:07:59 PM	Cyber-Rain PRO Controller 1	1	Front Lawn	2	2.02	-1%	-0.02	Scheduled
7/13/2010 3:12:01 PM	Cyber-Rain PRO Controller 1	3	Back Yard 1	2	0.73	64%	1.27	Scheduled
7/13/2010 3:12:01 PM	Cyber-Rain PRO Controller 1	4	Back Yard 2	2	1.98	1%	0.02	Scheduled
7/14/2010 1:06:54 AM	Cyber-Rain PRO Controller 1	1	Front Lawn	7	7.02	0%	-0.02	Scheduled
7/14/2010 1:06:54 AM	Cyber-Rain PRO Controller 1	2	Side Lawn	7	0.17	98%	6.83	Scheduled
7/15/2010 1:01:41 AM	Cyber-Rain PRO Controller 1	1	Front Lawn	7	2.02	71%	4.98	Scheduled
7/15/2010 1:03:40 AM	Cyber-Rain PRO Controller 1	3	Back Yard 1	0	2.02	0%	0	Scheduled
7/15/2010 1:05:39 AM	Cyber-Rain PRO Controller 1	7	Pond	0	2.02	0%	0	Scheduled
7/15/2010 1:05:39 AM	Cyber-Rain PRO Controller 1	8	Side Shrubs	0	1.97	0%	0	Scheduled
7/17/2010 1:00:00 AM	Cyber-Rain PRO Controller 1	1	Front Lawn	7	7.02	0%	-0.02	Scheduled
				Total 80 Mins	Total 51.42 Mins	Average 33.21 %	Total 36.59 Gallons	

The Water Usage Report can be sorted by any of the fields by clicking the arrow next to the column name. Sorting by date allows the user the ability to only show watering activity that occurred during a specific day, week, month, or year. The report can also be printed or exported by pressing the "Print Report" button on the bottom of the page. The export features supports many different file types, including TXT, PDF, HTML, XLS, and RTF formats.

Any “dry contact interface type” rain sensor can be attached to your Cyber-Rain controller. The rain sensor will provide a double layer of protection against watering when it is raining. If it senses rain, it will stop all watering regardless of whether the rain has been forecast. Watering will not resume until the rain sensor is no longer activated. The rain hold length can be extended by setting an optional delay until watering resumes.

Follow these steps to properly integrate a rain sensor to your Cyber-Rain controller:

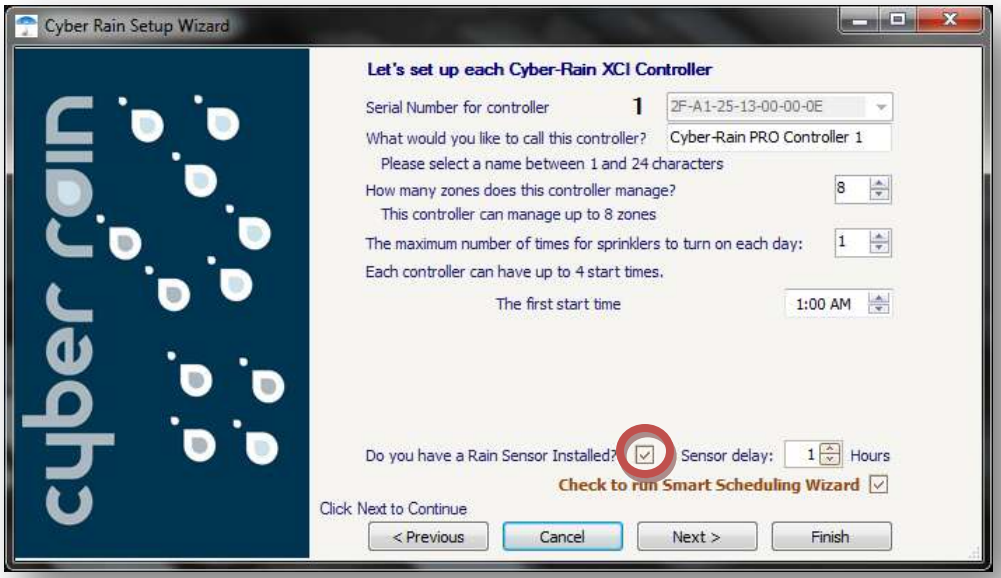
1. Ensure that your rain sensing device is properly mounted in a location where the rainfall is to be measured.

2. There will be two wire leads that extend from the rain sensor device. Make sure that these leads are long enough to reach the controller. Insert each wire into the included rain sensor harness (see photo of part C on Page 3) and tighten each screw until it clamps down tightly on the wires. Connect the (+) *positive* wire to the left side opening in the rain sensor harness and the (-) *negative* wire to the right side opening (make sure the screw terminals are facing up). Normally, the *red* wire goes to (+) *positive* terminal and the *black* wire to the (-) *negative* terminal.

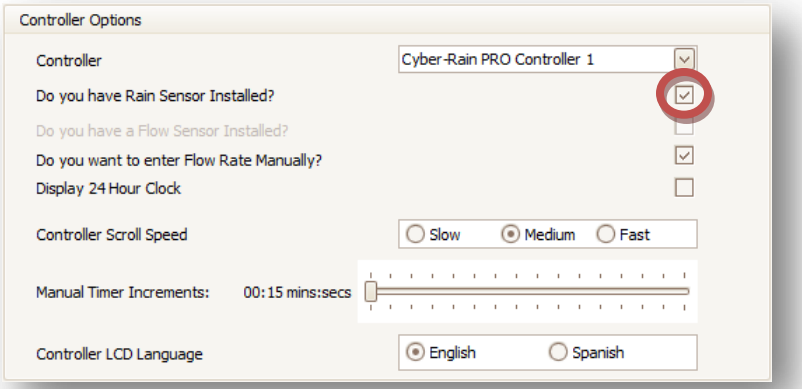
3. Insert the rain sensor harness into the connector located on the bottom of your controller labeled “RAIN” making sure that it is properly aligned. **Note this is the 2-wire slot on the LEFT.**

4. Activate the rain sensor within Cyber-Rain by either:

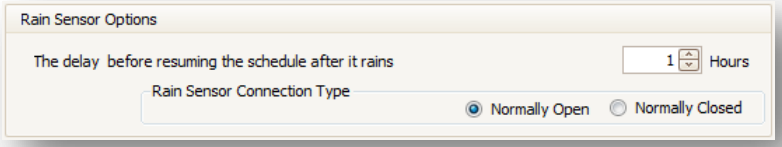
    a. During the set-up wizard, check the box to indicate that a rain sensor is attached. If you would like to further delay watering after the rain sensor is no longer activated, set the desired number of hours. The default is set to 1 hour delay.


Cyber Rain Setup Wizard
Let's set up each Cyber-Rain XCI Controller
Serial Number for controller 1
2F-A1-25-13-00-00-0E
What would you like to call this controller?
Cyber-Rain PRO Controller 1
Please select a name between 1 and 24 characters
How many zones does this controller manage?
8
This controller can manage up to 8 zones
The maximum number of times for sprinklers to turn on each day:
1
Each controller can have up to 4 start times.
The first start time
1:00 AM
Do you have a Rain Sensor Installed?
Sensor delay:
1
Hours
Check to run Smart Scheduling Wizard
Click Next to Continue
< Previous
Cancel
Next >
Finish

b. On the Systems Details tab, select the "Rain Sensor Installed" checkbox, indicating that you have connected a rain sensor to your controller. Under the "Rain Sensor Options," set the rain sensor delay time to the desired value.



5. Set the rain sensor type. After enabling the rain sensor option in the System Details tab, the following menu will become visible:



Rain sensors are sold in two different varieties, *normally open*, and *normally closed*. **Normally open** controllers have two wires connected to a switch which does not provide a path for electrical current when dry. When rain is detected, the sensors close the circuit and allow a path for electrical current. **Normally closed** sensors provide a path for electrical current until rain is detected, at which point the switch is opened and an open circuit is produced.

It is important to choose the correct sensor configuration. Choosing the wrong configuration will cause rain sensor holds. Most rain sensors are normally open when not activated, so this is Cyber-Rain's default setting. Please determine your sensor type from your sensor's documentation. To verify the correct sensor type has been chosen, check the controller status under the weather panel on the Schedule tab. If there is a "Rain Sensor Hold" and the rain sensor has not been activated, the wrong sensor type has been selected in the System Details tab.

Installing and Using a Flow Sensor (Pro Model Only)

Cyber-Rain Pro controllers are compatible with Data Industrial, ARAD/Netafim, Bermad and other flow sensors that have a magnetic reed (dry contact) interface. When integrated, flow sensors send flow data to the controller interface for accurate flow monitoring. This will enable Cyber-Rain to alert you to broken or blocked sprinklers by sensing abnormally high or low flow. It will also allow irrigation water usage to be determined.

To properly implement flow sensing on your Cyber-Rain controller, you must complete the following steps:

Note: If you have a "Meter Type" flow sensor, a minimum of two pulses is required to establish flow rate. If a zone has emitters with very low precipitation rates, the "Fill Time" may be longer and there may be a delay in reporting flow to the PC.

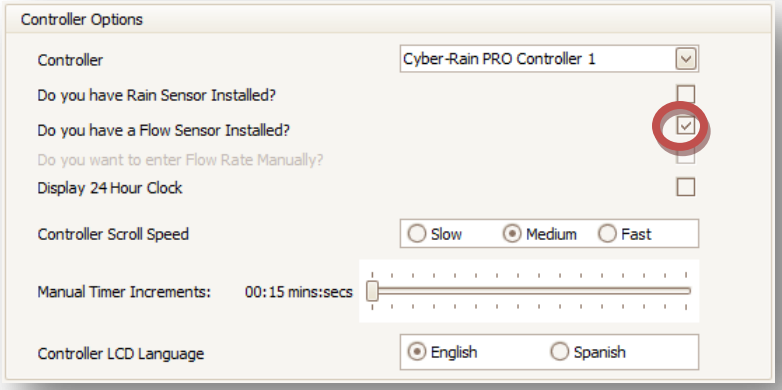
1. **Mount:** Follow the instructions given in the flow sensor's manual to install the flow sensor at the desired location.

1. **Wire:** The flow sensor wires should be properly shielded as to reduce the risk of electrical interference. Use only shielded and armored buried signal cable, with stranded copper conductor twisted pair 18 AWG wire. Do *not* ground each side of the shielding, as this can introduce electrical noise. Running the signal wires in the same wire harness as the valve wires also increases the likelihood of signal noise.

2. **Connect:** There will be two wire leads that extend from the signal cable. Make sure that these leads are long enough to reach the controller. Insert each wire into the flow sensor harness, Part C *(included)* and tighten each screw until it clamps down tightly on the wires. Connect the (+) *positive* wire to the right side opening in the flow sensor harness and the (-) *negative* wire to the left side opening (make sure the screw terminals are facing up). Typically the *red* wire goes to (+) *positive* terminal and the *black* wire to the (-) *negative* terminal.

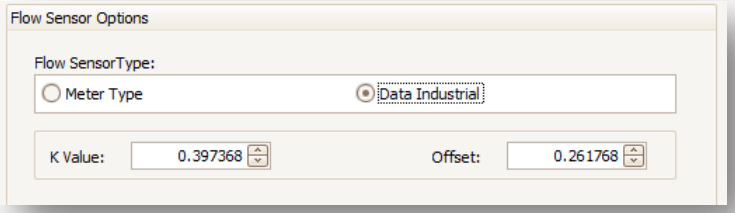
3. **Insert:** Insert the flow sensor harness into the connector located on the bottom of your controller labeled "FLOW", making sure that it is properly aligned. **Note this is the 2-wire harness on the RIGHT.**

4. **Setup Parameters:** On the System Details tab, select the "Flow Sensor Installed" checkbox, indicating that you have connected a flow sensor to your controller. The Flow Sensor Options box will now be fully visible. Select the type of flow meter that you have.



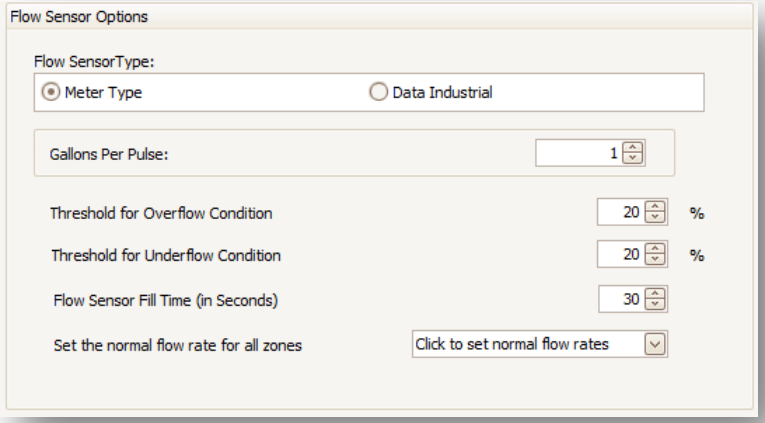
a. Meter Type: Select this option if you have a "Meter Type" flow sensor (e.g., ARAD/Netafim, Bermad). The "gallons per pulse" parameter allows you to calibrate the software to your specific flow sensor. This value is typically found marked on the flow sensor itself. Enter this value in the appropriate field on the System Details tab.

b. Data Industrial Type: Select this option if you have a "Data Industrial" impeller type flow sensor. The "K Value" and "Offset" parameters should be provided with your meter and allow you to calibrate the software to your specific flow sensor. Enter these values in the appropriate fields on the System Details tab.



5. **Set Thresholds:** The "Thresholds" are used for setting the alert levels of too much or too little watering flowing through your valves. **If Cyber-Rain detects overflow, it will shut off your watering** and send you an email. If it detects underflow, it will send you an email but keep watering. Thresholds are set as a percentage difference from normal flow. For example, if the

normal flow for a valve is 10 GPM and the overflow threshold is set to 20%, a flow rate of 12 GPM or greater will cause an overflow condition. Likewise, if the underflow threshold is set to 20%, a flow rate of 8 GPM or less will cause an underflow condition. The Cyber-Rain software ships with default threshold values of 20%, but these can be adjusted as needed.



6. **Set Fill Time:** Fill time is the amount of time that it takes the irrigation pipes to reach a steady state flow of water. Irrigation pipes tend to flow water more rapidly when first they are first opened as the pipes are pressurized. If the fill time is set too short, the controller will register an overflow event before the flow rate has had a chance to stabilize. To properly determine your fill time for each zone, manually run the zone while keeping note of the elapsed time. The amount of time that passes before the flow rate stabilizes is your fill time. Fill time is typically 30-90 seconds; Cyber-Rain defaults this time to be 30 seconds.

7. **Set Normal Flow:** Flow sensing does not occur until the "Normal Flow" has been set for each zone. Normal flow is the typical rate water flows through each valve when water is flowing at a steady state and everything is working correctly.

8. Normal Flow rate is set for all zones by clicking the pull down menu. It is suggested that the normal flow rate be set after running each zone at least once, as Cyber-Rain will record the last actual flow rate. The Normal Flow rate can be copied from the last recorded flow rate by pressing the button on the top of the box, and then individually adjusting zones as needed. A zone's normal and last observed flow rate can also be found on the Zone Details page.

Once your flow sensor has been properly installed and setup on the Cyber-Rain software, you are ready to begin using it for monitoring your irrigation flow and receiving alerts for abnormal flow conditions. You can monitor the actual flow rate through a zone by watching the gauge on the Schedule tab while that zone is running. The counter will keep track of gallons used and can be reset by pressing the reset button.

Controller Alerts (Pro Model Only)

Cyber-Rain continually monitors your controller and sprinkler system to make sure everything is working correctly. When the system is working normally, the traffic light on the Schedule tab will be green. However, if Cyber-Rain detects something outside the thresholds for normal operation, an alert will be triggered and you will be notified in the following ways:

- The display screen on the controller will indicate an alert.
- The traffic light on the Schedule tab will change to yellow or red.
- There will be an alert message on the bottom of the Schedule tab.
- The Systems Alert box in the System Details tab will be filled in with information about the type and location of the alert.
- You will be sent an alert email to the email address used in the Setup Wizard (if the Send Alert Emails box is checked in the Systems Detail tab).

Important: To assure you receive email alerts, add donotreply@cyber-rain.com to your address book so messages do not get delivered to the junk folder.

Cyber-Rain continually checks for three types of alerts – temperature, current and flow.

Temperature Alerts

Temperature Alerts indicate when the temperature inside the controller box is too high or low. Note that the sensor is measuring the temperature inside the controller box, not the outside air temperature. The thresholds for temperature alerts cannot be changed. Potential temperature alerts are:

High Temperature Alert

- Indicates: The temperature inside controller box is too high. Electronic components within the controller may be damaged.
- Cyber-Rain response: An alert is triggered, and the controller stops watering all zones.
- Potential causes of alert:
  - Controller is located in an area which is very hot. If temperature alerts are frequent, the controller may need to be relocated to avoid damage to the internal electronics.
  - The controller is overheating due to a malfunction. Please call tech support at 877-888-1452 or email us at support@cyber-rain.com if you are receiving this alert repeatedly when the outside temperature is not hot.
- How to clear alert:
  - This alert will automatically clear itself when the controller temperature returns to the normal range.
  - Manually clear the alert by pressing Clear Alerts either under the stoplight on the Schedule tab or in the System Alerts section on the System Details tab within the Cyber-Rain software. Note the alert will return if the temperature continues to be too high.

Low Temperature Alert

- Indicates: The temperature inside controller box is close to freezing. Pipes may freeze if sprinklers are left on.
- Cyber-Rain response: An alert is triggered, but the controller continues to water all zones.
- Potential causes of alert:
  - Outside air temperature is close to 32 degrees.
- How to clear alert:
  - This alert will automatically clear itself when the controller temperature returns to the normal range.
  - Manually clear the alert by pressing Clear Alerts either under the stoplight on the Schedule tab or in the System Alerts section on the System Details tab within the Cyber-Rain software. Note the alert will return if the temperature continues to be too low.

Current Alerts

Current Alerts are triggered when the current running through the sprinkler valves is too high or low. The default settings for alerts are set wide to avoid unwanted alerts, but can easily be adjusted on the top right of the System Details tab. To activate low current alerts, set an under-current threshold above 0 and safely below the typical current levels going through your valves. You can read your existing current levels by manually running a few zones and watching the current gauge on the Schedule Tab. An undercurrent threshold of 150 milliamps is generally appropriate in most residential settings. The default for an over current alert is 750 milliamps, which should be suitable for the majority of installations. **Note that Cyber-Rain will stop watering the zone when a high current alert has been tripped, so the threshold should be set with care.**

Potential current alerts are:

Current Hold Alert

- Indicates: Current going through valves is above the maximum threshold when all sprinklers are OFF.
- Cyber-Rain response: An alert is triggered and **THE CONTROLLER WILL NOT WATER ANY ZONES** until the alert is cleared.
- Potential causes of alert:
  - Over Current Threshold is set too low. Check to make sure that the threshold (found in the System Detail's tab) is set to a value sufficiently higher than the typical zone current.
  - Electrical short in the wiring. Check to make sure there is no short in the zone wiring using an ohm meter. The resistance should be at least 20 ohms.
  - If you observe a Current Hold Alert when no zone is running please call Tech Support at 877-888-1452, or email us at support@cyber-rain.com. The controller may be malfunctioning.
- How to clear alert and resume watering:
  - This alert will automatically clear itself when the current going through the valves returns to normal levels.
  - Manually clear the alert by pressing Clear Alerts either under the stoplight on the Schedule tab or in the System Alerts section on the System Details tab within the Cyber-Rain software. Note the alert will return if the current remains above the maximum threshold.

Over Current Alert

- Indicates: Current going through a valve is above the maximum threshold when that ZONE is running.
- Cyber-Rain response: Alert triggered and **THE CONTROLLER WILL NOT WATER THE AFFECTED ZONE** until the alert is cleared.
- Potential causes of alert:
  - A sprinkler valve is failing and opening too much.
  - Your threshold for over current alerts is set too low. Within the Cyber-Rain software, click the System Details tab and adjust the Over Current Threshold within the Current Sensor Alerts section.
- How to clear alert and resume watering for the affected zone:
  - This alert will automatically clear itself when the current going through the valve returns to normal levels.
  - Manually run the zone from either the controller or computer after the underlying cause has been addressed.
  - Manually clear the alert by pressing Clear Alerts either under the stoplight on the Schedule tab or in the System Alerts section on the System Details tab within the Cyber-Rain software. Note the alert will return the next time Cyber-Rain waters this zone if the current remains above the maximum threshold.

Under Current Alert

- Indicates: Current going through a valve is below the minimum threshold when that zone is running.
- Cyber-Rain response: Alert is triggered, but the controller continues to water all zones.
- Potential causes of alert:
  - A sprinkler valve is failing and not opening sufficiently.
  - The sprinkler valve wire is not properly inserted in the valve harness.
  - Your threshold for under current alerts is set too high. Within the Cyber-Rain software, click the System Details tab and adjust the Under Current Threshold within the Current Sensor Alerts section.
- How to clear alert:
  - This alert will automatically clear itself when the current going through the valve returns to normal levels.
  - Manually run the zone from either the controller or computer after the underlying cause has been addressed.
  - Manually clear the alert by pressing Clear Alerts either under the stoplight on the Schedule tab or in the System Alerts section on the System Details tab within the Cyber-Rain software. Note the alert will return the next time Cyber-Rain waters if the current remains below the minimum threshold.

Flow Alerts

Flow Alerts indicate when abnormally high or low water flow is detected. An optional flow meter must be properly installed to detect flow alerts and the normal flow must be set for each valve. See **Installing and Using a Flow Meter** in this User Manual for more information on proper set up. Potential flow alerts are:

Flow Hold Alert

- Indicates: water is flowing through the valves when all sprinklers are off

- Cyber-Rain response: alert triggered and **THE CONTROLLER WILL NOT WATER ANY ZONES** until the alert is cleared.
- Potential causes of alert:
  - A sprinkler valve has malfunctioned and is stuck open.
  - Your main line has a leak.
- How to clear alert and resume watering:
  - This alert will automatically clear itself when no water flow is detected for one minute
  - Manually clear the alert by pressing Clear Alerts either under the stoplight on the Schedule tab or in the System Alerts section on the System Details tab within the Cyber-Rain software. Note the alert will return if the flow continues when all of the sprinklers are off.

Over Flow Alert

- Indicates: more water is flowing through a valve than the overflow alert threshold for that zone.
- Cyber-Rain response: alert triggered and **THE CONTROLLER WILL NOT WATER THE AFFECTED ZONE** until the alert is cleared.
- Potential causes of alert:
  - A sprinkler head is broken.
  - A sprinkler line has a leak.
  - A sprinkler valve is failing and is opening too much.
  - Your threshold for over flow alerts is set too low. Within the Cyber-Rain software, click the System Details tab and increase the Overflow Threshold percentage within the Flow Sensor Options section.
  - The normal flow rate for the zone is set too low. To check your normal flow rate setting, see the Zone Details tab within the Cyber-Rain software. Select your zone and modify the normal flow rate as needed.
- How to clear alert and resume watering for the affected zone:
  - Manually run the zone from either the controller or computer after the underlying cause has been addressed.
  - Manually clear the alert by pressing Clear Alerts either under the stoplight on the Schedule tab or in the System Alerts section on the System Details tab within the Cyber-Rain software. Note the alert will return the next time Cyber-Rain waters if the flow remains above the maximum threshold.

Under Flow Alert

- Indicates: less water is flowing through a valve than the underflow alert threshold for that zone.
- Cyber-Rain response: alert triggered but controller continues to water all zones.
- Potential causes of alert:
  - A sprinkler valve is failing and not opening sufficiently.
  - A sprinkler head or line is blocked.
  - The sprinkler valve wire is not properly inserted in the valve harness.
  - Your threshold for under flow alerts is set too low. Within the Cyber-Rain software, click the System Details tab and increase the Underflow Threshold within the Flow Sensor Options section.
  - The normal flow rate for the zone is set too high. To check your normal flow rate setting, see the Zone Details tab within the Cyber-Rain software. Select your zone and modify the normal flow rate as needed.

- Your Flow Sensor fill time is set too low, meaning your pipes have not completely filled when the flow sensor starts measuring the flow. Adjust your Flow Sensor Fill Time within the Flow Sensor Options section of the System Details tab.

- How to clear alert:
  - This alert will automatically clear itself when the flow going through the valve returns to normal levels.
  - Manually run the zone from either the controller or computer after the underlying cause has been addressed.
  - Manually clear the alert by pressing Clear Alerts either under the stoplight on the Schedule tab or in the System Alerts section on the System Details tab within the Cyber-Rain software. Note the alert will return the next time Cyber-Rain waters if the flow remains below the minimum threshold.

Re-Running the Setup Wizard

If a change to the Cyber-Rain irrigation system must be made, such as adding additional controllers to the system, changing the number of start times, incorporating water restrictions to the schedule, or rerunning the Smart Scheduling Wizard, the Setup Wizard can be re-run by selecting "Run Setup Wizard…" from the Settings section of the menu bar. When "Run Setup Wizard" is clicked, a wizard will guide you through the process.

About

The About section of the software contains the title of the software, its current version number, and a link to our website.

Adding Additional Controllers

If you require more watering zones than the capacity of your controller, you will need to purchase an additional Cyber-Rain XCI controller available from Cyber-Rain or your local authorized reseller. Multiple controllers can be operated from a single PC using the same remote wireless access point included in the complete system. The controllers do not need to be located near each other as long as they are all within range of the Cyber-Rain wireless access point.

Please install any additional controllers in the same manner as your original controller. See the Install Controller section of this User Manual.

Adding Additional Controllers to the Software Interface

- Make sure each additional controller is plugged in.
- Access the Cyber-Rain Setup Wizard by selecting Settings and Run Setup Wizard from the menu in the upper left.
- Newly added controllers are automatically detected and will be indicated in the setup wizard (shown below).

Cyber-Rain XCI Setup Wizard
Welcome to the Cyber-Rain XCI set up wizard
This Wizard will walk you through setting up your
Cyber-Rain XCI Sprinkler Controller System
Number of Controllers Detected: 3
Click Next to Proceed
< Previous
Cancel
Next >
Finish

- Click "Next >."
- The "Controller Setup" screen opens for each controller (see figures below), in sequence. For each controller, follow these steps:

- Confirm that the serial number of your controller matches the serial number in your documentation (also on the back of the Cyber-Rain controller). If there is a discrepancy, contact Cyber-Rain technical support.
- Give each controller a name (such as “Cyber-Rain Controller1,” “Cyber-Rain Controller2,” etc).
- Each controller can control 1 to 8 zones or 1 to 24zones, depending on the model. Select the total number of zones that you activated when inserting the valve wires into the controller unit.
- **You can set each controller to turn on sprinklers 1 to 4 times a day.** Select the number that suits your needs, and then choose times for each watering cycle.
- Click “Next >” to cycle to the additional controllers, setting them up sequentially.
- It is recommended that you rerun the smart scheduling wizard after additional controllers are installed. This will provide suggested watering times for each of the added zones. See the Setup and Smart Scheduling Wizard section of this User Manual.

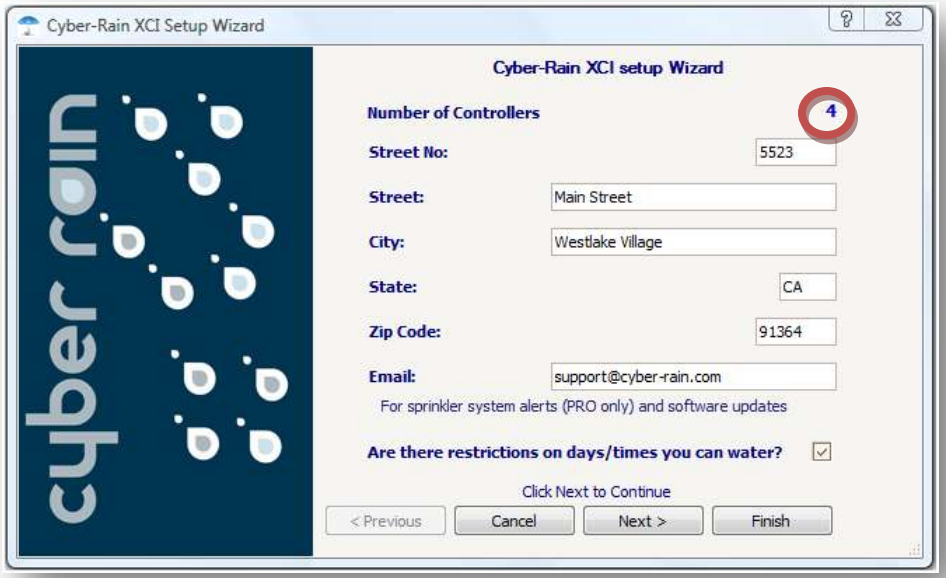


Figure 14: Verify That Correct Number of Controllers is shown

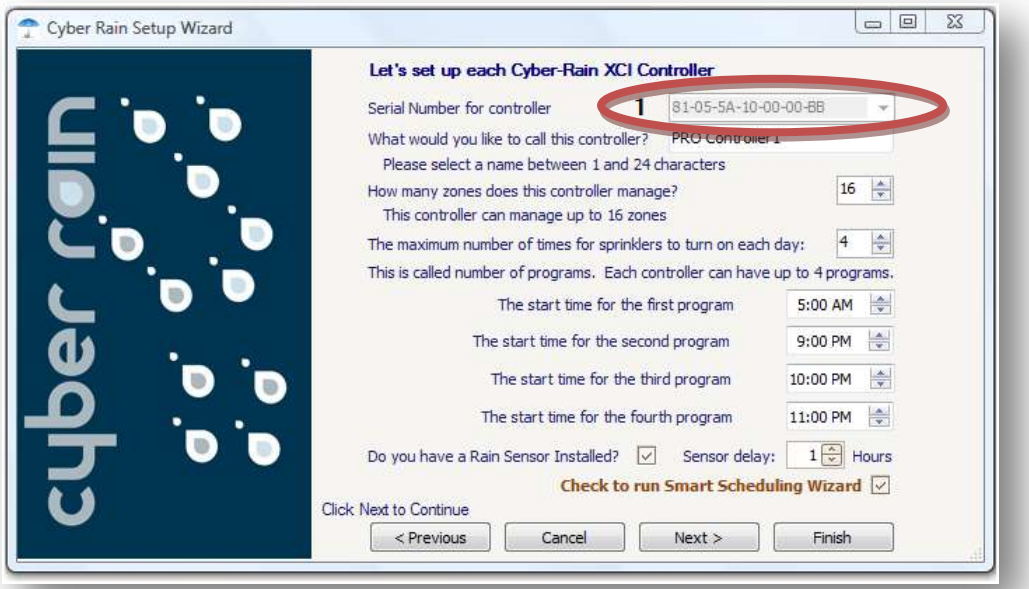
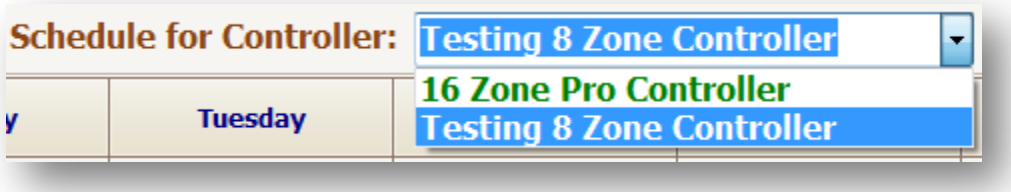

Cyber Rain Setup Wizard
Let's set up each Cyber-Rain XCI Controller
Serial Number for controller
1
81-05-5A-10-00-00-BB
What would you like to call this controller?
PRO Controller 1
Please select a name between 1 and 24 characters
How many zones does this controller manage?
16
This controller can manage up to 16 zones
The maximum number of times for sprinklers to turn on each day:
4
This is called number of programs. Each controller can have up to 4 programs.
The start time for the first program
5:00 AM
The start time for the second program
9:00 PM
The start time for the third program
10:00 PM
The start time for the fourth program
11:00 PM
Do you have a Rain Sensor Installed?
Sensor delay:
1
Hours
Check to run Smart Scheduling Wizard
Click Next to Continue
< Previous
Cancel
Next >
Finish

Figure 15: Verify Each Serial Number Corresponds to the Correct Controller

Additional controller's schedules can be accessed from the pull-down selection menu next to "Schedule for Controller:" in the Cyber-Rain "Schedule" tab. As stated before, the zone names and the baseline watering schedule can be edited. The start times for each watering cycle can also be changed.

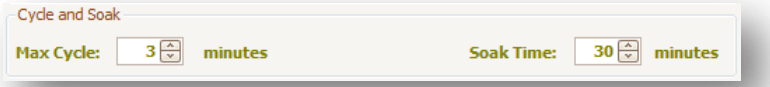


After times are entered for each controller, click "Save Schedule." **YOU WILL NEED TO CLICK SAVE THE SCHEDULE BUTTON FOR EACH CONTROLLER.**

Cycle and Soak

Cyber-Rain controllers employ a water saving feature known as *"Cycle and Soak"*. Cycle and Soak pauses the zone for a programmable duration of time to allow for the water to soak into the soil. This is especially useful for reducing the chances of water runoff on sloped ground or dense soil.

To change the Cycle and Soak settings, click on the *Zone Details* tab. Select the *Controller No.* and *Zone No.* of the zone you would like to adjust. The Cycle and Soak settings can now be adjusted for that particular zone.



- **Max Cycle** refers to the maximum length of time that a zone should run for before it stops and allows time for the water to be absorbed into the soil.
- **Soak Time** refers to the length of time that the controller should allow for the soil to absorb water before running the zone again.

When Cycle and Soak times are set, the controller will water the zone for the Max Cycle period, and then pause the zone watering for the scheduled Soak Time. The controller will move on to the next scheduled zone's watering interval in the mean time. Once the Soak Time has expired, the controller will again water the zone for its Max Cycle time, and then pause again for the scheduled Soak Time. This process will repeat until the entire scheduled watering interval is run for each zone that was scheduled. Typical Max Cycle times are in the range of 3-5 minutes, and typical Soak Times are in the range of 15-30 minutes. When the cycle and soak method is used with drip irrigation, the cycle time must be longer. The length of watering time varies depending on the type of emitter type, plant type, and soil type.

The Cycle and Soak feature is automatically enabled when the Smart Scheduling Wizard is run. To disable Cycle and Soak for a particular zone, select the zone in the Zone Details tab, and set both the Max Cycle time and Soak Time to "0" minutes.

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Remote Scheduling

Remote scheduling gives the user the ability to monitor and adjust the Cyber-Rain schedule from any location where internet access is available. In addition, an authorized landscape maintenance contractor can be authorized to monitor and adjust the schedule remotely. **Note that the PC which is controlling your Cyber-Rain system will need to be powered ON and connected to the Internet to receive schedule updates, and these updates will be reflected after the Cyber-Rain's next hourly check of the weather, NOT in "real time."** When Cyber-Rain receives any remote schedule changes, it will automatically update the irrigation schedule to reflect these changes, and communicate the new schedule to the controller.

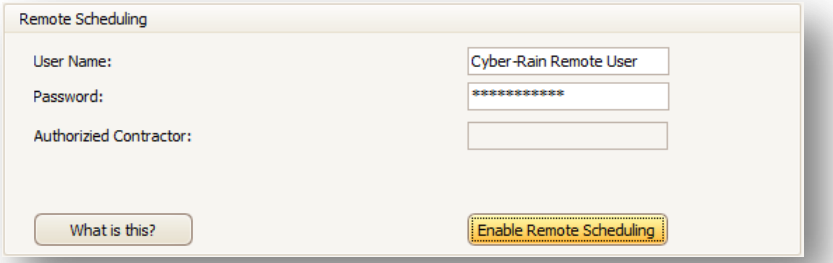
In order to enable remote scheduling, you must have the following:

- **Cyber-Rain Software version 4.12 or higher:** This can be verified in the "About" section of the software in the Settings menu bar.
- **Firmware version 4:** This can be verified for each controller by clicking the Controller Status button on the bottom right corner of the Schedule tab, and ensuring that a number greater than 400 is shown in the Firmware column.

If you have these minimum requirements, you can then proceed to Cyber-Rain Remote Access Sign Up page (http://www.cyber-rain.com/ra/login.aspx).

Otherwise, please contact Cyber-Rain Technical Support at (877) 888-1452 or email support@cyber-rain.com.

To enable remote scheduling a Customer Account must be created. Click the link above to visit the Cyber-Rain website's login page. To create a new account, click the "Create a Customer Account" button. Once the account has been created, enter the User Name and Password into the Cyber-Rain software's Remote Scheduling section of the Advanced Settings tab, and then click on the "Enable Remote Scheduling" button. The system is now remote scheduling enabled, and the Cyber-Rain controller can be monitored and adjusted from any web browser. Remote scheduling can be disabled at any time by clicking on the "Disable Remote Scheduling" button.



After creating an account and enabling the remote scheduling feature, a new feature box will appear titled "Last Schedule Updates." This allows the ability to force the synchronization of the schedule at any time as well as UPLOAD your PC's schedule to the remote server or DOWNLOAD the remote server's schedule to the PC's software schedule. Note that it is not necessary to force synchronization, as Cyber-Rain will attempt to automatically sync the schedules hourly.

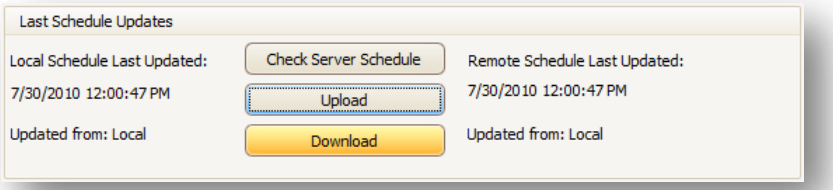


Figure 16: Upload or Download the Schedule to the Server from the Advanced Settings tab

Once remote scheduling has been set up for a computer and the schedule has been uploaded to the server (either automatically or by pressing the Upload button) the schedule will be found in the My Controllers section of the website under the customer tab:

Changes to the schedule can be made from this page. Make sure to press “Save” when the schedule is complete. The server will attempt to send the updated schedule to the computer the next time they communicate (usually every hour when an internet connection exists).

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Troubleshooting Guide

If you are experiencing technical difficulties with your Cyber-Rain system, or you are having trouble installing a new system, please feel free to reference the Troubleshooting Guide as an aide to diagnosing and resolving the issue. The Troubleshooting Guide can be downloaded from the Cyber-Rain Website Support section, and it can also be found in the installation directory of the Cyber-Rain software.

Please remember that the Frequently Asked Questions section of the Cyber-Rain website provides answers to the most common queries, and the Cyber-Rain Support Team can be contacted via email at Support@Cyber-Rain.com, or by calling Customer Support toll free at **(877) 888-1452** Monday through Friday, 9AM to 5PM Pacific Time.

Thank you for choosing the Cyber-Rain Smart Sprinkler Controller!